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FIRST ANNUAL CONFERENCE

OF THE

COUNCIL

ON

MEDICAL EDUCATION

OF THE

AMERICAN MEDICAL  
ASSOCIATION

HELD IN CHICAGO. APRIL 20, 1905

DR. LEWIS S. McMURTRY, President of the American Medical Association, being introduced to the conference, directed attention to the fact that ever since the foundation of the American Medical Association its chief purpose has been to promote and to advance the standard of medical education in the United States. For years the delegates to the annual meetings of the Association represented the medical colleges of the country; hence, the Council on Medical Education is carrying out one of the most important purposes of the parent bodies.

This meeting, he said, was called for the purpose of bringing together the various examining and licensing powers of the states and territories, to secure a mutual interchange of ideas and counsel. It is evident that any movement looking toward reciprocal registration between the various states and toward uniformity in standards and requirements should be held under the auspices of the American Medical Association, for the reason that it has for its great purpose the elevation of the masses of the profession, which it is fulfilling by bringing together the doctors from all parts of the country.

### The History of the Council and the Scope of Its Work.

The scope of the work and history of the Council was outlined in full by the Chairman, as follows:

Gentlemen, Delegates from State Licensing Boards, Members of Committees from the American Medical College Association. Representatives of the Medical Corps of the United States Government, and Invited Guests:

The Council on Medical Education of the American Medical Association has invited you to this conference to obtain from you your advice and assistance and co-operation in the movement in which we all have a common interest, i. e., the elevation of the standard of medical education in this country. In order that the purpose of the present conference may be better understood, it might be well to review briefly the facts which led to the creation of the present Council on Education and the calling of this conference.

#### COMMITTEE APPOINTED IN 1902.

In 1902, at the Saratoga meeting of the American Medical Association, a committee of five members, to be known as the Committee on Education, was appointed by the President, Dr. John A. Wyeth:

The following report of this Committee on Education was presented to the House of Delegates of the American Medical Association, at the New Orleans meeting, 1903:

Mr. President and Members of the House of Delegates:

Your Committee on Education, consisting of Floyd W. McRae, Atlanta, Ga.; Rudolph Matas, New Orleans, La.; R. A. Marmion, U. S. Navy, Washington, D. C.; C. A. Daugherty, South Bend, Ind.; and Arthur Dean Bevan, Chicago, Chairman, respectfully submit the following report:

#### FIRST OBJECT OF THE A. M. A.

We desire, first, to call attention to the fact that the American Medical Association was formed for the purpose of elevating the standard of medical education in this country. The original call of the Medical Society of the State of New York, which led to the formation of the American Medical Association, was as follows:

"WHEREAS, It is believed that a national convention would be conducive to the elevation of the standard of medical education in the United States; and

"WHEREAS, There is no mode of accomplishing so desirable an object without concert of action on the part of the medical societies, colleges and institutions of all the states.

*"Resolved,* That the New York State Medical Society earnestly recommends a national convention of delegates from medical societies and colleges in the whole Union to convene in the city of New York on the first Monday in May, 1846, for the purpose of adopting some concerted action on the subject set forth in the foregoing preamble.

*"Resolved,* That a committee of three be appointed to carry the foregoing resolution into effect."

These delegates met and adopted the following, which resulted in the formation of the American Medical Association:

1. That it is expedient for the medical profession of the United States to institute a National Medical Association.

2. That it is desirable that a uniform and elevated standard of requirements for the degree of M.D. should be adopted by all the medical schools in the United States.

3. That it is desirable that young men before being received as students of medicine should have acquired a suitable preliminary education.

Your committee finds, therefore, that the American Medical Association was founded for the purpose of elevating and controlling medical education in the United States. Your committee believes that this is still the most important function of the American Medical Association. In the course of years this object has been largely lost sight of, probably because with a loosely organized body it was difficult to accomplish satisfactory results in this direction. With the new reorganization of the Association into a compact representative body, representing the medical profession of each county and state, your committee feels that the American Medical Association has become the best national instrument to control and elevate medical education.

#### CONTROL OF MEDICAL AFFAIRS A STATE FUNCTION.

Our form of government in this country, giving to each state the right to control its own affairs, subject simply to the limitations imposed by the Constitution of the United States, makes it impossible to obtain medical legislation from the National Government. A national influence, if not control, of some sort is obviously a necessity. In the absence of national governmental control, we believe that national effort to elevate medical education can be made most effective through the agency of the American Medical Association. Your committee believes that it is the duty of the American Medical Association to undertake such national control of the matter of medical education, and that it has the influence sufficient to make its regulations effective.

Your committee finds that the standard of medical education in the United States is very uneven, representing the highest and lowest types, as compared with such civilized powers as England, France and Germany. As a whole, it is distinctly lower than in those countries, and lower than it should be to meet the requirements of medical science in the present stage of development. With the advances which are rapidly making medicine a science, the study and practice of medicine are becoming year by year more important and weighty functions in the community.

#### BETTER TRAINED PHYSICIANS NEEDED.

Medicine demands a better order of intellect and better preparation than is possessed by the poorer part of the men who are to-day entering its ranks in America. The other great world powers, our competitors in commerce, arts and science, demand in their medical men as a minimum requirement a preliminary education equal to or more than our best high schools, and then five years of medical study. Such requirements are none too high, and we in this country can not much longer afford to remain satisfied with anything in medicine short of the best. We can not, however, obtain such a marked advancement in requirements at once or in one step. Such an advance must gradually be brought about. Many agencies are now actively at work elevating medical education in this country. The great universities with medical departments have some of them advanced their requirements to a higher point than that obtained anywhere else

in the world; the examining boards of many states have done much to elevate medical education by their demands: the work of the Association of American Medical Colleges has also been a factor of importance.

#### A NATIONAL INFLUENCE NEEDED.

The great work, however, of bringing the entire body of the American medical profession up to an acceptable standard will be accomplished, not by university presidents or state legislatures, or associations of medical schools acting alone, but by the co-operation of these agencies with the medical profession acting through its national association, the American Medical Association.

The first step in advancing medical education to be taken by the American Medical Association should be the adoption of an educational requirement for membership, i. e., the fixing of a minimum requirement, both as to preliminary education and as to medical education. This, in the opinion of your committee, should be:

1. As a preliminary requirement a high-school education, i. e., sufficient to enable the student to pass the examination for entrance to our standard universities.

2. A four years' medical course of at least seven months in each year. This requirement should become effective within four years and apply to graduates of 1907, and after that date, sufficient notice being thus given to all medical schools of the country to enable them to change their curricula to meet these requirements. As to the best plan of making this effective, your committee believes that this should be accomplished in the following way:

#### THE PERMANENT COUNCIL SUGGESTED.

After voting to adopt such educational requirements, the House of Delegates should notify the officials of each state medical society that the American Medical Association has determined on such educational requirements for membership, and instruct such officials to notify each county medical society in their state, with the request that the educational requirement adopted by the American Medical Association be made a part of the constitution of each county medical society. Your committee believes that such action would be taken practically unanimously, and in this simple way the first and longest step in the way of controlling and elevating medical education by the American Medical Association could be accomplished. Because of the amount of work, especially correspondence, made necessary to see that such educational requirement is made a part of the constitution of each county medical society, your committee suggests that a considerable degree of permanence be given to the Committee on Education, and that sufficient funds be appropriated to enable such committee to effectively carry on its work.

Your committee suggests that the educational committee consist of five members serving five years, one to be appointed each year; the first committee to be appointed one for one, one for two, one for three, one for four and one for five years; thereafter one appointed each year.

Your committee suggests further, that a sum not exceeding \$5,000 each year be appropriated to carry on the work of the Committee on Education, a part of this to be paid a salaried assistant secretary selected by the committee. We recommend that the Secretary of the American Medical Association be made *ex officio* a member of this committee, and that headquarters of this committee be provided in the office of THE JOURNAL Building of the American Medical Association.

#### WORK OF COUNCIL OUTLINED.

Your committee further suggests that it be the duty of the Committee on Education to

1. Secure the adoption of the educational requirements determined on by the American Medical Association by each state medical society, and assist the state medical societies in securing the adoption of these educational requirements by each county medical society.

2. To see to it that all medical schools are thoroughly informed of the educational requirements of the American Medical Association, and to urge on such schools as do not demand such requirements the necessity of doing so.



3. To inform themselves as to the requirements and character of work done by each medical school.

4. To inform themselves as to the laws governing the practice of medicine in each state and as to the manner in which these laws are being enforced.

5. To inform the state examining boards and licensing bodies of the educational requirements of the American Medical Association, and urge those whose requirements are below those of the American Medical Association to adopt the higher requirement.

6. To inform themselves on all matters pertaining to medical education.

7. To carry out the instructions of the House of Delegates in matters of medical education.

8. To make a full report on their work to the House of Delegates at each annual meeting.

Believing, as did the founders of this Association, that the most important function of the American Medical Association is the elevation and control of medical education in this country, your committee asks for your careful consideration of this subject, and urges prompt and effective action along the lines suggested.

(Signed)

ARTHUR DEAN BEVAN, Chairman.

#### THE MATTER POSTPONED.

This report of 1903 was favorably received by the House of Delegates and referred to the Trustees. The Trustees, however, did not at that time see their way clear to expend a sum of money not to exceed \$5,000 a year, called for by the report, and advised that the matter be laid over until the following year, and be brought up in a modified form, leaving the amount to be expended for this educational movement to the discretion of the Trustees, and again there seemed to be a feeling, not expressed by official action, however, that the demand for an educational requirement for membership might be an obstacle in the way of the large plans for reorganization which were then being actively pressed. It was thought, therefore, that the matter of educational requirement might be left for consideration at a period when reorganization was more complete and secure.

#### PERMANENT COUNCIL AGAIN SUGGESTED.

In 1904, at the Atlantic City meeting, the same committee brought in the following report:

Mr. President and Members of the House of Delegates:

Your Committee on Education, consisting of Floyd W. McRae, Atlanta, Ga.; Rudolph Matas, New Orleans, La.; R. A. Marmion, United States Navy, Washington, D. C.; C. A. Daugherty, South Bend, Ind., and Arthur Dean Bevan, Chicago, Ill., Chairman, respectfully submits the following report:

1. The American Medical Association was founded for the special purpose of obtaining a uniform and elevated standard for requirements for the degree of M.D.

2. The American Medical Association has so far accomplished little toward this end. The existing standards are not satisfactory as compared to those of the other great powers.

3. Our form of government makes it impossible, or improbable at least, to obtain national governmental control of medical education.

4. In absence of national governmental control, efforts to make uniform and elevate the standard of medical education can be made most effective through the agency of the organized medical profession of the entire country, and such a body we now have in the reorganized American Medical Association.

5. The problem of using to the best purpose the weight and influence of the American Medical Association toward elevating medical education is a very large one and one which must be carefully worked out. This can best be done by a permanent committee or council specially created for this purpose.

6. We recommend the creation of such a council by the following addition to the By-Laws, to be Chapter X, Section 8:

The Council on Education shall consist of five members, to be appointed by the President and confirmed by the House of Delegates.

Immediately after the adoption of this by-law, one member shall be appointed to serve for one year, one for two years, one for

three years, one for four years, and one for five years. Thereafter one member shall be appointed each year to serve for five years.

The council shall organize, elect a chairman and secretary, and shall adopt such regulations for the government of its actions as it deems expedient. It shall expend money or contract financial obligations only as shall be authorized in writing by the Board of Trustees.

The functions of the Council on Medical Education shall be:

1. To make an annual report to the House of Delegates on the existing conditions of medical education in the United States.

2. To make suggestions as to the means and methods by which the American Medical Association may best influence favorably medical education.

3. To act as the agent of the American Medical Association (under instructions from the House of Delegates) in its efforts to elevate medical education.

#### PERMANENT COUNCIL ON MEDICAL EDUCATION CREATED.

This report was adopted, the amendment suggested made a part of the by-laws, and the Council on Medical Education created, and the present members appointed by President Musser.

In December, a meeting of this council was held in Philadelphia, and the conclusion was reached that the most effective work could be done by this council not independently, but by co-operation with the other agencies which were interested in and working for the elevation of the standards of medical education. As a result, this conference was called, with the hope that it might be productive of good, and that it might lead to a permanent national conference on medical education, with regular annual meeting.

#### AGENCIES WORKING FOR HIGHER STANDARDS.

There are many agencies interested in medical education. Most of these are represented at this conference.

1. The medical profession itself, represented here by the Council of the American Medical Association.

2. The medical schools, represented by committees of the Association of American Medical Colleges.

3. The state boards which have been created by the legislatures of the various states, and which represent the public represented here by members of the state examining and licensing bodies. The Government Medical Corps, represented by members of the Army and Public Health and Marine-Hospital Services, and teachers in colleges of liberal arts, who are greatly interested in the question of the relation of colleges of liberal arts to the medical school, represented by gentlemen who have made this problem a special study.

#### THE PRESENT CONFERENCE.

The program of to-day includes the reports of subcommittees on Preliminary Education on Curricula, and the discussion on such phases of the subject of medical education as the Council considered were especially pressing at the present time, as, What shall be the standard of recognition of medical colleges? The question of reciprocal registration. The relation between the college of liberal arts and the medical school. And, most important of all, and, in fact, the real purpose of this conference is found in the last section of the program, i. e., the question of cooperation between the American Medical Association and the state licensing bodies in the effort at elevating medical education.

#### PRESENT CONDITIONS UNSATISFACTORY.

The existing conditions of medical education in this country are unsatisfactory as compared with the conditions found in England and Germany. The existing conditions are well shown by an abstract of laws regulating the practice of medicine in the various states and territories of the United States, published in pamphlet form by THE JOURNAL of the A. M. A., Jan. 1, 1905.

A table giving the principal features of the different state laws shows that all of the 52 states and territories, including Hawaii and Porto Rico, have medical laws of more or less value. Of these 52, 35 require both a diploma and a state examination; 12 an examination alone; 5 either a diploma or an examination. In 13 the examining board is a separate body; in the remainder the examining is a function of a board, such as the state board of health. Only 5 states demand a preliminary examination by



the state. In 17 the examining board is either nominated or approved by the state medical societies.

Although a critical analysis of existing conditions shows an unsatisfactory state of affairs, still, as compared with the conditions which existed twenty years ago, even the most pessimistic critic must admit that we have made great progress. Then many states had no medical laws at all. In many registration and the payment of a small license fee was all that was required. Many accepted a diploma, and but two, or at most three years of medical work was insisted on; and practically none demanded any evidence of preliminary education.

#### THE IDEAL REQUIREMENT.

What would be regarded as a perfectly satisfactory state of affairs for medical education, we might say ideal state of affairs, from our present view-point? Such medical education must be equal to that required by England and Germany. It would comprise:

1. A preliminary education such as would enable the student to enter our standard universities, with an average age of about 18; the passing of this preliminary education by the state authorities.

2. Five years of medical work, the first year to include physics, chemistry and biology. This year to be taken either in a medical school or in a college of liberal arts; and the last year of the medical course to be so arranged as to bring the student in actual contact with patients at the bedside.

3. A diploma from a medical school in good standing, this being evidence that the student has completed his work and passed examinations satisfactory to the medical school; and, further, that the medical school, as shown on investigation either by the state board or by the Council on Medical Education of the American Medical Association, or both, is doing the kind of work which entitles it to recognition.

4. This diploma should be accepted as evidence entitling the holder to take an examination before his state board. And, on passing such examination, which should be so conducted as to test in the most thorough way the candidate's knowledge, he should be entitled to practice.

5. Essentially the same state of affairs medical should exist in all the states and territories, and the license to practice conferred by one state should be recognized by all.

#### COOPERATION OF ALL AGENCIES DESIRED.

In view of the rapid progress made within the last twenty years, it would seem reasonable to believe that within another period of twenty years we shall find medical education in this country advanced to the condition which we have outlined. However, in order to accomplish such results, much must be done, and all the agencies which can assist must co-operate toward the desired end, and the advancement can not take place all at once, but one step at a time. There are many practical obstacles which must be overcome. They must be recognized, and their weight and influence considered. Among them two are especially important: First, the inequality, as far as general education is concerned, between the various states. It is easier to demand a high standard in New York and Minnesota than in some of the Western and Southern states, because public opinion and professional opinion has not been educated to demand a high standard in those states. It is believed, however, that the profession of every state and territory can do very much to correct this by preaching and demanding higher ideals.

A second obstacle, and one of a good deal of moment, is found in the medical colleges which are conducted as private corporations. There can no longer be any excuse for the existence of a medical school which is conducted by a body of men for profit. It is only necessary to state the demonstrated fact that it costs more to furnish a student with a medical education than he pays for fees to show conclusively that a medical school supported solely by the fees of students, and which pays a profit to its owners, is doing poor work and has no warrant for existence. Fortunately, with the increase of requirements, especially for preliminary education, these medical schools will be forced either to seek endowments or absorption by universities which will

enable them to do acceptable work or else they will be condemned to extinction by the law of the survival of the fittest.

#### PROPRIETARY SCHOOLS NO LONGER A NECESSITY.

However, these schools represent property and professional interest, and honorable achievement in the past, which are not to be ignored, and, if possible, sufficient notice of increase in requirements should be given, and the advances made at a rate which will enable those which are worth saving to bring themselves up to the higher requirements.

#### MINIMUM REASONABLE TEMPORARY STANDARD.

What can we reasonably demand as a minimum requirement at the present time of those seeking to enter the medical profession, and how can this demand be best enforced? These are the questions which are vital and pressing. Personally, I feel that the following requirements are reasonable and can, by the co-operation of the agencies interested in medical education, be made at once effective:

1. Preliminary education, a four-year high school or academy education, such as shall prepare a student to pass the entrance examination to our standard universities. The preliminary education to be passed on by the state authorities, or, at least, not by the faculty of the medical school.

2. A medical course of four years, each year of at least thirty weeks (exclusive of holidays) in a medical school in good standing; such standing to be determined by a joint conference of the Council on Medical Education of the American Medical Association and delegates from the state licensing bodies.

3. The presentation of a diploma from such school in good standing shall entitle the holder to appear before his state board for examination for license to practice.

4. The passing of a satisfactory examination before a state examining board.

It would seem that we might obtain action from the legislatures and medical examining boards which would insure the adoption of the general plan outlined above; and, further, we could hope that, as one after the other of the states conformed to these regulations, a scheme of reciprocity might be developed which would soon embrace all but the most backward of the states; and when the great majority of the states agreed the weaker sisters soon would fall into line.

What we need is co-operation, especially the co-operation between the medical profession, represented by the American Medical Association, the state and county medical societies and the state authorities, represented by the state licensing and examining boards. The most important question, therefore, before this conference is: How can the American medical profession and the state licensing bodies co-operate to elevate and control medical education? It is believed that such co-operation is possible. In such co-operation it will be the function of the American Medical Association to represent and possibly mold the opinion of the medical profession, and to employ its influence and the influence of the county and state medical societies in obtaining proper medical legislation. In such co-operation it will be the function of the state licensing bodies to protect the interests of the public and the profession by seeing that the medical laws are properly interpreted and enforced, and from their intimate knowledge with the medical acts they can often be of service in securing or modifying medical legislation.

It is not the purpose of the Council on Medical Education of the American Medical Association to arrogate to itself any special powers, nor does it desire either to criticise or interfere in any way with any of the agencies which are already in the field. If its creation is to result in good, it must be the means of obtaining co-operation between the medical profession, the medical school, the college of arts, the state examining boards, the government services, and all the factors which are interested in elevating and controlling medical education.

Gentlemen, with such objects in view, we ask your assistance, advice and co-operation. We thank you for responding to our invitation and for your attendance here to-day. It is hoped that the questions submitted will have the fullest discussion, in which you are all asked to take part. It is hoped that this first conference may lead to the establishment of an annual conference between the bodies which are represented here to-day, and that such conferences may be productive of much good.

## Report of Subcommittee on Preliminary Education.

On behalf of the Subcommittee on Preliminary Education, Dr. V. C. Vaughan reported as follows:

Your committee appointed to report on the requirements for admission to medical schools submits the following:

Medicine has from the remotest times been known as one of the learned professions, and its history, in a general way at least, justifies this honor. Professional pride should, therefore, lead those in whose charge the good name of the profession now rests to see to it that its ranks are recruited with the best. It is true that the medical charlatan still flourishes, and that the credulity of the mass of mankind in medical matters grows less, if at all, very slowly; yet there has never been a time when the regular medical profession had more absolute control of the portals through which aspirants for its honors must pass than at the present time. The schools can set their standards as high as they wish, and beyond and above the schools are the state boards of medical examiners which can act as a second barrier to the admission of the undesirable. If, therefore, in this condition of affairs the reputation of the profession for wide and accurate learning suffers in the least, its leaders and teachers are responsible for its abasement.

### NO LONGER A DEMAND FOR PHYSICIANS.

There is no crying need for more physicians and surgeons. The supply quite equals the demand, and for this reason the time is propitious for raising the barrier to admission one notch higher. We do not mean that a close corporation or a trades union should be formed, but we do mean that the reputation of our profession for culture and learning should be strengthened, and so long as the supply outruns the demand we are in duty bound to select with more care the individuals that constitute the supply.

Modern medicine consists of those facts, gathered from the various sciences, that are capable of utilization in either the prevention or cure of disease. All the physical sciences, at least the fundamental ones, have made and are still making contributions to medical knowledge, and medicine can advance no faster than the sciences on which it is founded advance. Discovery of facts must precede their application. Therefore, medical men must encourage research work, and it is a duty imposed on every medical school to advance the bounds of scientific knowledge. For centuries there were individual medical men who believed that certain diseases are disseminated by low forms of life, which, multiplying parasitically in the bodies of men, elaborate poisons and thus induce the symptom-complex of these diseases. But the germ theory of disease had to await the discovery of the compound microscope before it could pass from the list of theoretical conceptions into that of demonstrated facts. Times that are marked by scientific discoveries are closely followed by medical advances. The chemist had to produce ether and chloroform before they could be applied in anesthesia. The perfection of the laryngoscope by Garcia opened up the way to the study and treatment of diseases of the larynx, and without the ophthalmoscope we would still be blind so far as the recognition of pathological conditions of the fundus of the eye are concerned. The laborious and long-continued investigations of Beaumont laid the foundations of all our present-day knowledge of disturbances of digestion. Illustration after illustration along these lines might be given, but inasmuch as the fundamental statement that every advance in medicine is founded on discovery can not be questioned, a great array of examples is not necessary.

### BETTER PRELIMINARY TRAINING NECESSARY.

However, some may be ready to ask, What has this to do with the requirements for admission to medical schools? It has everything to do with it; it is the keystone to the arch. Medicine consists in the application of scientific facts. It is the medical man who must apply these facts, and how can he do it if he be ignorant of the sciences from which they come? Without this knowledge the medical man is as helpless as a South Sea islander would be if asked to work a complicated machine. The man who is entering on the study of medicine must know the essential facts of the fundamental sciences, and what he does not know

he must have the means of acquiring. To sum up, then, we may say that medical schools should require of all matriculates a knowledge of the primary and essential facts and theories of those sciences that most liberally contribute to medicine, and a sufficient knowledge of language and literature to enable him to make constant additions to his knowledge of the sciences. Possibly it will be better to discuss the language requirement first.

Certainly no one should be permitted to enter on the study of medicine if he be ignorant of his own language, its syntax and its logic. We do not mean that a hypercritical knowledge of grammatical construction, which is so pedantically aired by many teachers of English, should be required; but the medical man should be able to read and write without gross violence to the rules of grammar and so that a person of average intelligence can understand him, and it is equally important that he be able to understand what intelligent people say and write.

#### KNOWLEDGE OF MODERN LANGUAGES.

This is so self-evident that I need not dwell on it. Should our medical students know any other living language? This is a question about which there may be some diversity of opinion. There are many eminent men both among the scientific and practical leaders of our profession whose knowledge of language is confined to their mother tongue. This is true of some of the greatest teachers of Europe as well as of America. However, this does not render less true the statement that the man who reads easily and intelligently German and French, in addition to his native English, has a great advantage over his brother who is confined in the acquisition of knowledge to his native speech. Everything of value sooner or later reaches the industrious and intelligent reader, even when he is confined to the English language, but his more fortunate colleague will often be ahead of him in time, and less frequently in the accuracy and extent of his information, because translations are often late and frequently are more or less faulty either in scope or in accuracy. We would not say that a reading knowledge of German and French should be required for admission to all our medical schools, but it certainly should be recommended and those schools which can require it should do so.

The nomenclature of our profession is based on the Latin language to such an extent that all medical educators agree that at least two years' study of this language should be demanded of all medical matriculates.

It seems that there can be no marked differences of opinion concerning the amount of mathematical knowledge that should be required of the prospective medical student. It is to be presumed that he has adequate knowledge of arithmetic; that he knows how to solve problems algebraically, and that he understands plane geometry. Beyond this the medical student should have a short but thorough drill in plane trigonometry. Without this training physics must practically remain to him a *terra incognita*.

#### PRELIMINARY SCIENCES SHOULD BE REQUIRED.

Physics, chemistry and biology, the last including botany and zoology, are generous contributors to medicine, and in their essential facts and fundamental theories should be fairly understood by the medical matriculate. There is probably no other subject of equivalent importance so generally disregarded in medical education, either as a requirement for admission or as given in the course, as physics. How medical men can be fitted for the duties of the profession without any adequate knowledge of physics is a question frequently asked of us by French and German teachers, for in these countries the medical students take the thorough courses given in this subject to those who are working for the higher scientific degrees. In most medical schools in this country the most superficial courses in physics in high schools, often without any laboratory work, are accepted for matriculation; and no instruction in this branch is given in the medical curriculum, and yet a knowledge of this subject is needed in the application of all mechanical means for the correction of deformities, for the treatment of fractures and dislocations, for the study of errors of refraction, and in the use of the microscope, ophthalmoscope, laryngoscope, Finsen light, x-ray, etc. College or advanced physics should be either required for admission or given in the medical curriculum.



The requirement in chemistry for admission to most of our medical schools is well-nigh worthless, and the instruction in this subject and its numerous branches in our medical curricula is often of but little value, embracing, as it does, one or possibly two semesters of lectures, with demonstrations covering the whole range of general, analytical, physiologic and toxicologic chemistry, supplemented by a brief course in the laboratory of analytical chemistry. How can it be expected that one whose knowledge of chemistry is thus limited should comprehend Ehrlich's side-chain theory or have any comprehension of food principles to say nothing of their assimilation and utilization in the human body? A knowledge of the fundamental facts and theories of general chemistry should be required for admission, and either before or after admission each student should be thoroughly instructed in the theories of organic chemistry and the general principles of physiologic chemistry and to some extent in the methods of toxicologic investigation.

The prospective medical student should have a broad and comprehensive knowledge of general biology, a subject which is now taught quite adequately only in the best high schools. This instruction should be, in part at least, given in the laboratory. This furnishes a good basis for both the morphologic studies, as histology, embryology and bacteriology, and for those of physiology and physiologic chemistry that come in the medical curriculum.

#### SUMMARY OF PRELIMINARY REQUIREMENTS.

To sum up this part of the subject, we think that the following should constitute the requirements for admission for the present to our medical schools:

1. At least three years of English, including grammar, rhetoric and logic. To this a year or more of English literature might be added with advantage.

2. At least two years of Latin, including the grammar, composition and at least four books of Cæsar. We believe that four years of Latin will be all the better, but the shorter course might be permitted as a minimum.

3. We regard an easy reading knowledge of German of great value to the medical man, and if the same familiarity with French be added, when he enters the profession he will have his own indolence to blame if he does not keep abreast of professional advance.

4. Mathematics should be pursued through higher arithmetic, school algebra, geometry and trigonometry.

5. The fundamental facts and theories of physics, chemistry and general biology should be impressed by laboratory instruction.

6. The medical man should not be lacking in general knowledge and he should be expected to be informed in descriptive and political geography and in the history not only of his own country, but of the world.

Experience has shown that it is easy to get medical schools to place requirements on paper, but more difficult to have them enforced. For this reason we look with favor on the enactment of laws taking the decision on preliminary requirements out of the hands of medical faculties and placing it on official boards, and, although the official standard may be too low, as it certainly is in at least one state, its enforcement is more certainly secured. We can see no reason why our country should not have the best medical schools in the world, and if four years be too short a time to secure such a training let us lengthen the time either by requiring more thorough collegiate training of our matriculates or by adding a year to the medical curriculum. Let us elevate the profession and leave it on a higher plane than we found it.

(Signed) VICTOR C. VAUGHAN.

J. A. WITHERSPOON.

The discussion of this report was opened by PROF. RICHARD D. HARLAN, President of Lake Forest College. He said that these preliminary studies in science should be taught as pure science entirely, and that the liberal arts college is better prepared to do this than is the medical college. By delegating this work to the liberal arts college, the medical college will relieve congestion in the first year of its curriculum.

DR. S. D. VAN METER, Colorado, called attention to the fact that the majority of states require some evidence of the moral standard of the applicant; therefore, it might be well, for those in charge of deciding the question of preliminary education, to keep this fact in mind and select men who have the proper breeding to fit them for a college course.

DR. A. F. BARROW, Louisiana, said that their state board has noted the advancement of the medical education of students presenting themselves for licensure, but that they also noted an absolute disregard on the part of some medical colleges of the educational requirements for matriculation. For this reason his board refuses to recognize the graduates of some colleges. That condition of affairs might easily be corrected by the co-operative influence of the American Medical Association, through the Council on Medical Education, by requiring that entrance certificates come from somebody, such as the board of medical examiners of a state, a certificate from whom will admit to a medical college.

DR. J. C. WEBSTER, Indiana, referred to the matriculation requirements of the Indiana State Board of Examiners. In order for a college to turn out good material, it must start with good material. Indiana is ready to cooperate with other bodies to attain the accomplishment of this object.

DR. S. C. BAKER, South Carolina, suggested that a knowledge of Greek is fully as essential as a knowledge of Latin. French or German; hence, it would be advisable to include Greek in the preliminary requirements. South Carolina requires of applicants for licensure evidence of graduation from a medical college of established reputation, and of possessing sufficient preliminary education, at least a first-grade teacher's certificate granted by a county or state superintendent of education.

PROF. J. H. T. MAIN, Grinnell College, proposed offering an option between Latin and Greek. The latter is a creative language and the fundamental terms in anatomy, bacteriology, chemistry, etc., are absolutely Greek. Hence there is good reason why, if emphasis is put on any ancient language, there should be an option between Latin and Greek.

DR. G. W. WEBSTER, Illinois, said that, while there has been much talk about raising standards, no real standard has as yet been established.

The report of the subcommittee on medical curriculum was presented by Dr. Charles H. Frazier.

### Report of Subcommittee on Medical Curriculum.

Your subcommittee on the medical curriculum begs leave to present its report in two sections. From the study of the catalogues and from his knowledge of the training of most medical schools, Dr. Councilman found, in attempting to form what seemed to be an ideal curriculum, that there were certain difficulties in the way of putting into successful operation the best methods of medical education. These he believed to be mainly two: First, there is a lack of appreciation of the true methods

of medical education; second, the relation of medical schools and hospitals, the latter practically controlling the appointments in the schools, prevent proper methods from being carried out. As a preface, therefore, to the curriculum which he proposes for consideration, he presents his views on the conditions underlying medical education.

The second section of the report, which was prepared by Dr. Frazier, contains an expression of opinions with reference to the methods of formulating a standard curriculum, and submits for consideration a curriculum which in essential particulars corresponds to that of Dr. Councilman.

Your committee has studied carefully the catalogues of the majority of the medical schools, and is struck with the great variations, not only in the arrangement of the course, but in the methods of instruction, as well as in the hours which are allotted to each. Thus, for example, in some schools anatomy is taught in the first three years, and in others only in the first year. In some only 20 lectures are given; in some 160 hours; in some only 174 hours are allotted to practical work, and in some 522 hours. In some schools no lectures are given in histology, and in others 128; in some but few hours in practical work, in others 288. Bacteriology is taught in different schools in the first, second, third and fourth years of the curriculum; in some instances with no practical work at all. In medicine the number of clinics varies from 32 to 288, and the lectures from 20 to 140; and in surgery the number of clinics varies from 48 to 288, and the lectures from 28 to 192. These data are sufficient to bring out the wide discrepancy that exists, and serves as an argument for the necessity of reform.

#### PART I.—BY DR. COUNCILMAN.

The object of medical education is to train individuals so that they may be of service in combating disease. Some of the individuals so trained will deal with the great questions of disease as it affects the general public; some will seek by the experimental study of disease to increase knowledge; but by far the greatest number will deal with disease in the individual. The same methods of education are applicable to all.

Tact, sympathy, generosity of character, knowledge of human nature, all qualities of the highest importance in determining the usefulness of the physician, can not be taught in the medical school. These qualities are partly innate, partly the result of culture.

The student in the medical school may acquire knowledge of disease and proficiency in the use of methods by means of which knowledge is acquired. Knowledge in medicine, as in any other branch of science which deals with things, is derived from the study by the senses of objects and the phenomena exhibited by them. The study is aided by various methods, by the use of which the territory covered by sense impressions is extended. From the interpretation of sense impressions and by analogy, hypotheses may be formed which are to be tested by experiment and future observations. The experiment is also of great value in enabling observations under known conditions to be made. The study of disease is difficult because of our lack of knowledge of the living tissues and the conditions acting on them to which the disease is due. Every day teaches us more of the complexity of the tissues and fluids of the body, and we are only beginning to understand how complex are the relations between living tissues and parasites. Every case of disease presents some variations from the type, and general knowledge of a peculiar disease gives little assistance in ascertaining the conditions produced in the individual affected. Knowledge of the conditions produced in the individual by disease is essential, and can only be obtained by the methods of science.

In medical education it must be recognized that the student can acquire knowledge of the things he is studying only by means of the senses. Lectures in medical education play a very subordinate rôle. The lecture has its place, but it has to be given in connection with the student's work, and it is for the purpose of amplifying and co-ordinating the knowledge he has obtained from the study of objects by means of his senses.

The four-year course in medical schools has been generally adopted. Two of these years can be devoted to the preparation of the student for clinical work, the other two to the various classes of clinical work. The first two years present little diffi-

culty. Their success depends on laboratory facilities and material for study, both of which can be provided, in some cases in fuller measures than in others. The difficulty comes in the last two years which are devoted to clinical work. For the proper teaching of clinical medicine, contact of the student with clinical material is essential. This can be provided only in hospitals.

The hospital must be regarded in a certain sense as a laboratory for the study of disease. The three purposes of a hospital are to provide care and comfort for the sick, to instruct others in administering to their care and comfort, and to increase knowledge of disease. None of these purposes can be efficiently carried out without the study of disease. In very few hospitals in this country does a medical school have any control of hospital appointments. Where there is such control both medical school and hospital show a greater degree of efficiency than in the case where the hospital, through the men who have clinical material in their hands, controls the appointments in the medical schools. In hospitals not vitally connected with medical schools, the prevalent method of making appointments and promotions is opposed to the attainment of the highest degree of efficiency in teaching and in the care of patients. It must stand to reason that the best men, who are trained and skilled in the most exact methods, who base their procedures for the relief of disease on knowledge rather than on conjecture or intuition, and who take infinite pains, must obtain the best results.

Present methods as followed by most hospitals do not lead to the best training and best development of men. As a rule, only the lowest positions in the out-patient departments of a hospital are filled by introducing new men into the hospital. Young men are chosen for these positions, and promotion is based on seniority of service. There is so little control exercised over the methods in these minor places that it is impossible for efficiency of service to be fully recognized. If the young man does his work according to the traditions of the hospital and does not make himself obnoxious to his superiors by too great a degree of activity or independence of thought and action, his promotion is sure. In the out-patient department the number of patients is usually too great for exact work to be done. Lax methods prevail, and the young man in his best years learns lax methods and does things by routine. By constant promotion control of clinical material for certain months of the year is obtained, and then the hospital appointee becomes a candidate for important teaching positions in the medical schools. By this time he usually possesses a lucrative private practice, his youthful enthusiasm is past, and the training which he has received has not been conducive to the best development.

The medical school should possess the power of appointment in hospitals, and the appointments should be made on merit alone. If it is not possible to obtain control of all appointments of a hospital, university clinics, consisting of a certain number of beds controlled by the medical school, should be established. The hospital will surely benefit by the introduction of new men with new ideas, and who have developed in different surroundings. Such men must be of recognized ability, for no other consideration should dictate their appointment by the medical school. The future and the highest development of medical education in this country is wholly controlled by hospital trustees.

The efficiency of laboratory teaching in most medical schools in this country far surpasses clinical teaching, and this is due to the fact that hospitals can not be used in the best manner for the study of disease. The greater ease of teaching the branches of medical education which lie outside of hospital work has led to giving relatively too great prominence to anatomy, physiology and pathology. The same discipline which is given in these branches can be given in clinical medicine, with the advantage that the student in clinical medicine has constant exercise in methods which he must constantly use when he leaves the medical school. We are beginning to see that the same methods of study, placing the student in close relation with the objects studied, which is used in anatomy, physiology and pathology, can be used in clinical teaching, and the clinic can never reach its true dignity and importance until this method is adopted. Disease can not be studied at long range. The tendency on the part of the hospital trustees to discourage the study of disease in the wards is to some degree passing away, and it is to be hoped that in the future they will come to see that the greatest good accomplished by a



hospital can take place only when the hospital appointments are given in the interests of medical teaching and its wards are fully used for the study of disease.

In submitting this curriculum of study, I have been guided in part by personal knowledge of what has worked well, and in part by the views as to the division of subjects and time in medical schools in which teaching is efficient. In the first two years of study I have given almost the arrangement of studies which is used in the Harvard Medical School and which has given good results. In this arrangement the work of the student is on one subject at a time. He studies the form and structure of the material in anatomy, the function in physiology, the disorders of form and function and their causes in pathology. The second half of the second year is devoted chiefly to the study of clinical methods, which will be used in the third and fourth years. The advantage of this method of concentrating study on one subject are: 1. It is found to work well; 2. the student keeps up his interest better and makes better progress; 3. teaching and study can be made more thorough; 4. the work of individual students can be better controlled; 5. it facilitates research by the teachers by giving time apart from teaching which can be devoted to research; 6. it is economical of time, the student loses much time in other methods by frequent changes of place and subject; 7. it is economical of space, the same teaching laboratories can be used at different times of the year for different subjects. One of the disadvantages urged against it is that the student memorizes a subject and then without constant repetition forgets it. If it were possible to teach medical science by exercises based on the memory this might be so.

I have regarded the year as giving 1,245 hours of work, allowing for the usual holidays and leisure hours in the day. In addition to the regular curriculum, special lectures or courses of lectures on subjects on which the lecturers have special knowledge should be encouraged. Such lectures can be attended by both teachers and students. In clinical studies I have included large amphitheater clinics in medicine, surgery and neurology. Such clinics could take the place of didactic lectures in these subjects. I have also included a weekly demonstration in pathologic anatomy. In such demonstrations the relation between the clinical phenomena and the lesions demonstrated should be held in view.

It is essential that every student must have during the third and fourth year a place in a laboratory and be provided with a microscope and clinical reagents in order that he can make at his convenience the necessary examinations of the products of disease in cases which he is studying. By making such work a matter of routine he obtains a proper reliance on methods, and will continue in them after leaving the medical school.

#### FIRST YEAR.

*First half year:* Anatomy (organology, histology, embryology). 624.

*Second half year:* Physiology, 384; physiologic chemistry, 240.

#### SECOND YEAR.

*First half year:* Pathology (gross and microscopic), including bacteriology and parasitology, 624.

*Second half year:* Physical diagnosis, 148; Pharmacology and toxicology, 126; Obstetrics (including histology and pathology), 242; hygiene, 48; surgical pathology, 60. Total, 624.

#### THIRD YEAR.

*Medicine:* (a) Clinics, 64; (b) O. P. D.,\* 248; (c) clinical microscopy, 288; (d) practical therapeutics, 48.

*Neurology:* (a) Clinics, 32; (b) O. P. D., 181; (c) neuropathology, 45.

*Surgery:* (a) Clinics, 64; (b) O. P. D., 200; (c) operative surgery on animals, 14.

*Obstetrics:* (practical work). Six cases for each student.

Special lecture on general medicine (fever, edema, comparative etiology of infectious disease, etc.), 32.

*Pathology:* (Demonstrations of gross material), 32.

\* Out-patient Department.

## FOURTH YEAR.

- Medicine:* (a) Clinics, 32; (b) wards and laboratories, 330.  
*Psychiatry:* (a) Lectures, 16; (b) ward visits, 48.  
*Pediatrics:* (a) Clinics, 32; O. P. D., 32.  
*Dermatology:* (a) Clinics, 32; (b) O. P. D., 80.  
*Surgery:* (a) Clinics, 32; (b) wards and operating room, 180;  
 (c) G. U. Surg. Clinics, 32; (d) G. U. Surg. O. P. D., 64; (e)  
 Orthopedics (lectures, clinics or demonstrations), 32.  
*Obstetrics:* (a) Obstetrical wards, 32.  
*Gynecology:* (a) Gynecologic pathology, 32; (b) wards and  
 operating room, 64.  
*Ophthalmology:* (a) Lectures, 16; (b) O. P. D., 32.  
*Otology:* (a) Lectures, 16; (b) O. P. D., 32.  
*Laryngology:* (a) Lectures, 16; (b) O. P. D., 32.  
*Pathology:* (Demonstrations of gross material), 32.

## PART II.—BY DR. FRAZIER.

There has never been a decade in the history of medical education in which more time and thought has been given to the subject than during that which has just passed. This has been due, in part, to the healthy rivalry that exists between the various medical schools; in part to the enormous additions which have been made to the material equipments and endowments, and in part to the stupendous increase in the sum of medical knowledge, necessitating a complete reorganization of the methods of instruction.

It may be truthfully said that on the essential points in the construction of medical curriculum the minds of those who have given to the subject their especial attention are beginning to crystallize. It is therefore possible to present a scheme for an ideal course to which few will take exception in any of its essential particulars. One of the most important duties of this Council, second only to the adoption of a minimum standard of requirements for admission to medical schools, is to bring to the attention of medical schools the desirability of having a uniform standard, and having framed one, the Council should use its influence through the proper channels to secure its adoption.

To make a standard curriculum possible, two questions must be settled at once; what subjects must be taught in each of the four years, and how much time should be devoted to each and what disposition should be made of the allotted time.

The assignment of subjects in the first two years will be a matter of little difficulty whether the concentration or the semi-concentration plan is adopted. The logical arrangement would place in the first year anatomy and chemistry, with possibly, bacteriology, and in the second year physiology and pathology. In the second half of the second year the student, in addition to the above studies, should receive a thorough course in physical diagnosis in order that he may be able to begin intelligently his clinical observations at the beginning of the third year. The course in hygiene and pharmacology may be included in this period.

The third year should be given over in a large measure to clinical studies; it should be regarded as the period of transition from the practical exercises in the fundamental subjects of the first two years to the purely practical exercises of the clinical subjects of the last year. In this year should be included the systematic courses in medicine, surgery and obstetrics, partly didactic and partly clinical, the latter including as much practical instruction in the wards and out-patient departments as time will allow. It should include, further, courses in which the fundamental subjects are elaborated in their relation to the clinical subjects; thus surgical or applied anatomy, surgical physiology and surgical pathology, neuropathology, gynecologic pathology and medical pathology, if that term could be applied to a critical study of the findings at the autopsy, and the bearing they have on the conditions noted in the clinical record. These courses to consist in clinical as well as laboratory demonstrations, and exercises so arranged with relation to each other that the student is trained to associate the nature of the lesion with the clinical manifestations of the disease. In the third year should be included also a thorough course in the clinical laboratory, in order that the student may be thoroughly versed in laboratory methods before he is called on to put them in practice in his fourth year. To

summarize the work of the third year, it embraces all the systematic instruction and some of the practical instruction in the three major subjects, medicine, surgery and obstetrics, together with the applied sciences, pathology as applied to medicine, surgery, gynecology, neurology, applied therapeutics and practical applications of laboratory tests to the body fluids, secretions and excretions.

The last or fourth year should be spent entirely in the hospital, a considerable portion of it in the wards, and the remainder in the laboratories, operating room, out-patient departments and to some extent the clinical amphitheater. Such a system is only possible where the school has under its control or at its disposition at least one large general hospital. The courses in medicine, surgery and obstetrics are continued, and to these are added neurology and pediatrics. While the two latter are not to be rated of equal importance with the three former subjects, they are too important to be classified with the specialties, and the time to be devoted to these should be prescribed accordingly.

I have as yet made no mention of the so-called specialties. To my mind they constitute the only bugbear in the medical curriculum. Just when they should be taught and how much time should be devoted to each is one of the most difficult questions to decide. Whatever disposition is to be made of them, one principle should always be adhered to: They should never be allowed to encroach on or to crowd the major subjects. Better, by all means, regard them as postgraduate, and require the student to add one-half or one more year to his course of study than to allow them to curtail his instruction in any of the major subjects. With reference to the specialties, I believe a medical school has discharged all its duties to the student as an undergraduate when it has taught him to distinguish between the conditions which he should be able to treat himself and those for which he should call on the services of a specialist there is enough time in the third and fourth years to give the requisite amount of instruction. The student should have some knowledge of each of the specialties and therefore I disapprove of a system of electives which enables him to elect some studies to the exclusion of others. Since there is not enough time in the fourth year to crowd in the courses all the specialties, these courses must be divided between the third and fourth years. Thus in the proposed curriculum (at Pennsylvania) we have assigned the courses in otology, laryngology, dermatology and ophthalmology to the third year, at the same time affording opportunities for students who may be especially interested in one or the other subjects to continue his studies for a limited time of the fourth year in the out-patient department. To this extent only is specialization tolerated as an undergraduate system. There remain of the specialties, orthopedic surgery, genitourinary diseases, gynecology and psychiatry; all these may be included in the curriculum of the fourth year.

In reviewing the statistics which have been collected from the hundred or more medical schools of the country one is struck more by the disparity between the time allotted to the similar subjects in the various schools than with the variation in their sequence; while it is practically impossible to ascertain from the majority of catalogues the precise number of hours of instruction given to each student in the various subjects, sufficient information from this source can be secured to confirm the above statement. This disparity is due, in part, to differences of opinion, in part to the limitations necessary because of inadequate facilities, and partly to certain factors which may be operative in one school and not in another. Among the latter may be included certain traditions and customs, which are not always easy to overcome, of the undue influence of an ultra conservative element in the governing body, the influence of an active, ambitious director in one department, and that of an indifferent director in another.

Unhampered in any way whatsoever, it would not be a difficult task to arrange the schedule of instruction. To do this one should first determine the relative importance of the subjects. Thus on a basis of 100 per cent., what percentage of time should be devoted to this as compared with that course, or to this group as compared with that group of studies? Having answered this question the remainder of the problem could be worked out almost with mathematical precision.

Of equal importance with proper apportionment of time to each subject is the establishment of a ratio between actual prac-

tical work: that is to say, work in which each student actually participates in an exercise, whether it be in the laboratory or in the hospital, and that in which the information is conveyed to the student through the medium of an instructor, whether by the didactic lecture, by the so-called clinical lecture or by a demonstration. It should not be a difficult matter to establish at least a minimum ratio, and once established the ratio should be obtained. In other departments of a great university, as in the graduate schools, the student in course for the degree of doctor of philosophy must give evidence that he has taken so many major or minor courses and each of these courses represents so many hours, and the proportion of laboratory to didactic work, or, as may well be paraphrased, the direct to the indirect method of instruction, is clearly specified. Thus in a course covering twenty hours a week, at least sixteen of these must be spent in the laboratory, representing a ratio of 4 to 1. It should be quite as possible to fix on a ratio in the courses for a medical degree. There might be some variation in the ratio according to whether we are dealing with the fundamental sciences or the clinical subjects, but once the proper ratio is established, we will have a basis on which to construct each course.

It is scarcely necessary to point out the advantages of a standard uniform curriculum. Its adoption would be a great step toward establishment of interstate reciprocity: it would stamp the medical degree with a definite and uniform value; it would unquestionably raise the standard of medical education to a higher average of efficiency. Not the least among the advantages to be derived from the adoption of a standard medical curriculum would directly affect the medical student, in that it would enable him to migrate from one school to the other. By receiving credit for the work which he has accomplished, he could continue his studies in any other school of the country. Such an elective system would make it possible to take any one, two or group of subjects wherein he thought he could do so to advantage. Beginning his studies in a school with a splendid equipment for teaching the fundamental subjects, though in a small community, he could pass on to another where, because of the larger population, there were better opportunities for instruction in the clinical branches. This is one of the features of education in the German university which we could well afford to introduce into the medical institutions of this country. This practice is not at all uncommon in the graduate schools of other departments. Why should this privilege not be accorded to the medical student? Apart from these purely scholastic or technical advantages, it must be admitted that a migratory system would do much toward correcting the tendencies toward provincialism, and in more ways than one give to the student greater opportunities of observation and a very much broader view of medicine: he would at the same time enjoy the refreshment, physical and intellectual, that would come with a change of environment and of teachers.

Assuming that there are 32 weeks of actual study, not including the examination period, and allowing two weeks for holidays, the total amount of time would amount to 1,200 or 1,300 hours, or an average of 1,250 hours per year. These may be prescribed as follows:

*First year:* Anatomy, 60 per cent.; chemistry, 30 per cent.; bacteriology, 10 per cent.

*Second year:* Physiology, 30 per cent.; pathology, 40 per cent.; physical diagnosis, 10 per cent.; hygiene, 5 per cent.; pharmacology, 15 per cent.

*Third year:* Medicine.—1. Clinics and lectures; 2. clinical laboratory; 3. ward classes; 4. O. P. D.; 5. practical therapeutics; 6. recitations, 40 per cent. Surgery.—1. Surgical pathology and physiology; 2. surgical anatomy; 3. clinics and lectures; 4. O. P. D., including minor surgery; 5. recitations, 35 per cent. Obstetrics.—Lectures, clinics and practical work, 5 per cent. Pathology.—Autopsy and demonstrations of gross material, 5 per cent. Ophthalmology.—Clinics and O. P. D., 2½ per cent. Otology.—Clinics and O. P. D., 2½ per cent. Rhinology.—Clinics and O. P. D., 2½ per cent. Dermatology.—Clinics and O. P. D., 2½ per cent. Total, 10 per cent.

*Fourth year:* Medicine.—1. Clinics; 2. clinical conferences; 3. ward classes; 4. ward work; 5. O. P. D.; 6. laboratories, 40 per cent. Surgery.—1. clinics; 2. clinical conferences; 3. ward classes; 4. ward work and operating room; 5. O. P. D.; 6. laboratories, 35 per cent. Obstetrics.—Practical work. Pediatrics.—



1. Clinics; 2. ward work; 3. O. P. D., 10 per cent. Neurology.—1. Clinics; 2. ward work; 3. O. P. D., 10 per cent. Gynecology.—1. Clinics; 2. ward work, 5 per cent. Orthopedic Surgery.—1. Clinics; 2. ward work and O. P. D.,  $2\frac{1}{2}$  per cent. Genito-urinary Diseases.—1. Clinics; 2. O. P. D.,  $2\frac{1}{2}$  per cent.

DR. WILLIAM C. WOODWARD, D. C., called attention to the fact that the Association of American Medical Colleges has adopted standards for entrance to medical colleges and for medical curricula which might serve as a basis.

DR. G. B. YOUNG, U. S. P. H. and M.-H. S., suggested that more time be devoted to hygiene, inasmuch as applicants for this branch of the government service are woefully deficient in that subject.

The report was also discussed by Drs. George W. Webster, Illinois, and A. Vander Veer, New York.

### What Shall the Standard Be for Recognition of Medical Colleges and How Shall Such Standard Be Determined?

DR. JOHN M. DODSON, Illinois, in opening the discussion on this subject, spoke briefly of the deficiency of state board examinations, and urged greater severity and more comprehensiveness in determining the applicant's fitness to practice medicine. As to entrance requirements, he proposed to add two years of collegiate training to the high-school training, so as to make room in the medical curriculum by eliminating such subjects as chemistry, physics and general biology, which can be taught to better advantage in colleges of liberal arts. The college term should be uniformly increased to nine months. Under the present arrangement students loaf for five months or so, or are engaged in some bread-winning occupation. This is a distinct loss of time, because after returning from a vacation it takes the student some time to get under way again.

As to a standard curriculum, it is needed, but educators must keep in mind the fact that students must have time for preparation, study and reflection. For each hour of recitation work the average student should have two hours of preparation, and for each two-hour laboratory or clinic period he should have one hour of preparation. Therefore, a curriculum ought to be prepared on the basis of study periods.

Schools to be recognized should have adequate equipment, adequate laboratories and suitable hospital facilities; they should have competent instructors, and those engaged in teaching the subjects embraced in the first two years of the medical curriculum ought to give their whole time to teaching and research work. The only way to determine that colleges are doing good work is by actual and efficient inspection, to be conducted under the auspices and by the authority of the state licensing and examining bodies.

DR. A. F. BARROW, Louisiana, proposed to raise the standard of medical education by raising the standard of medical preparation. It is most important what shall be required of the ap-

plicant for matriculation in a medical college. When medical colleges will refuse to matriculate all but those possessing the education necessary to pursue intelligently the study of medicine, two-thirds of the colleges will be eliminated.

DR. J. C. WEBSTER, Indiana, agreed that inspection of medical colleges would be most valuable, but a minimum standard of equipment should be agreed on so that the boards would have some guidance in their action.

DR. S. D. VAN METER, Colorado, suggested strengthening the power of the boards to enforce not only standards of education and equipment, but also the granting of licenses. Every applicant for licensure should make affidavit that he has complied with the preliminary requirements of the board, and that the college from which he has graduated enforces these requirements, making it a penalty of forfeiture of his license and penal servitude of ten years for violation of the law.

DR. G. C. SAVAGE, Tennessee, spoke of the conditions in the South as compared with those of the North, and the work of the college associations and its recognition by the various state boards. He appealed to the committee in the name of the southern medical colleges not to recommend any advancement in preliminary requirements or curriculum until two years hence, because the South is not ready for it. He said the inspector of medical colleges should not be an individual, because on making an unfavorable report, a suit might be filed against him. Therefore, if an inspector is appointed to look into the equipment and teaching facilities of institutions he must represent a corporate body, and there is no better than the American Medical Association.

### The Relation Between the College of Liberal Arts and the Medical School.

PROF. J. H. T. MAIN, Grinnell College, Iowa, discussed this question from three propositions: 1. The tremendous increase in the field of knowledge. 2. Increasing demands made by the public on educated men. 3. Comparative inadequacy of individual men to meet these demands.

DR. L. F. BARKER, University of Chicago, considered the question from the standpoint of the medical school, the college of liberal arts, and the state examining and licensing boards. He said that the state boards prescribed too literally the subjects which men must take in the medical school. Such regulations deprive students of the possibility of election, and it also makes it impossible for colleges to develop their curriculum in accordance with progressive ideas of medical education.

### Reciprocal Registration.

DR. GEORGE W. WEBSTER, Illinois, referred to the heterogeneous conditions existing and the large number of associations dealing with this problem from different view points. Reci-

procuity may be brought about more rapidly than is being done at present by education and evolution, by harmonizing discordant elements. All associations concerned with elevating the standard of medical education are working toward this end, but each body sets up its own standards and ignores those of others. He urged that the Committee on Medical Education make a persistent effort to obtain the cooperation of all the other associations and to merge them into this committee, which, representing the American Medical Association, is the proper organization to do this work. Instead of having many organizations with varying standards, there would be a single organization, with one standard, carrying on this work under the guidance of the American Medical Association, which is ready to carry on this kind of work along these lines. The committee should be empowered to visit every medical college in the country, and should furnish state boards with all the information they may desire. As a rule, state boards are not very familiar with the laws of other states, and this committee could furnish the boards with the necessary information. In that way more could be done in five years to bring about reciprocity than can be done under present conditions in twenty-five years.

DR. WILLIAM F. BAILEY, Kentucky, said that reciprocity must come through the influence of the American Medical Association. If the Council on Medical Education will go before the profession and urge better entrance qualifications and better courses of study in medical colleges, it will eventually bring about the desired result.

#### Cooperation Between the American Medical Association and the Licensing Boards.

DR. L. S. McMURTRY, President of the American Medical Association, briefly reviewed the history of the Association, its scope, the work done by it, and its power as a factor in medical education as well as in professional standing. In connection with this question it is necessary, he said, that the Association exert its influence in establishing and developing a strong public sentiment in the medical profession that will cooperate in establishing the advances desired.

DR. GEORGE H. SIMMONS, Secretary of the American Medical Association, said that the real first step that will result in practical benefit to all concerned was the creation of the Council on Medical Education, whose function it is to bring together and coordinate various enterprises so that definite, tangible results may be obtained. In order to bring the various boards together it is necessary to have some means of communication that is accessible to all, and the American Medical Association will be ready to assist in this work. There must be a central body through which all the licensing boards can work, a body something like the Medical Council of

England. whose visitors inspect all the colleges. The board can not pay to have this work done, and the college associations can not afford to have it done very long.

DR. S. D. VAN METER, Colorado, urged to place in the hands of the American Medical Association certain powers, and on behalf of the Colorado state board promised its cooperation in this work. He urged that the committee prepare a treatise for state examining boards on the following subjects: 1. Range of the police power of licensing boards. 2. Methods of procedure in conducting the trials of offenders against medical laws. 3. Salient points relating to the reliability of evidence. 4. Best methods of examining the credentials of applicants for licenses to practice medicine. 5. Standard credentials to be accepted as proof of moral and educational qualifications without a technical examination. 6. Detailed report on medical colleges and state boards which maintain high standard. 7. Suggestions for the preparation of examination questions and for the exclusion of "catch" questions. 8. Suggestions for the improvement of the personnel of examining boards.

DR. WILLIAM C. WOODWARD, D. C., said that no amount of education would result in reciprocity unless legislation was forthcoming, and that is the field for work for the American Medical Association in determining what legislation is necessary and desirable, so that state boards will have a basis for work.



SECOND ANNUAL CONFERENCE  
OF THE  
Council On Medical Education  
OF THE  
AMERICAN MEDICAL ASSOCIATION  
HELD IN  
CHICAGO MAY 12, 1906.

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No. 11.

SECOND ANNUAL CONFERENCE  
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COUNCIL ON MEDICAL EDUCATION  
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AMERICAN MEDICAL ASSOCIATION  
HELD IN  
CHICAGO MAY 12, 1906.

COUNCIL ON MEDICAL EDUCATION.  
103 Dearborn Ave., Chicago.

A. D. BEVAN, CHAIRMAN.....CHICAGO  
W. T. COUNCILMAN.....BOSTON  
J. A. WITHERSPOON.....NASHVILLE  
CHARLES H. FRAZIER.....PHILADELPHIA  
VICTOR C. VAUGHAN.....ANN ARBOR  
N. P. COLWELL, SECRETARY.....CHICAGO

CHICAGO :

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1906.

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# COUNCIL ON MEDICAL EDUCATION OF THE AMERICAN MEDICAL ASSOCIATION.

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The Second Annual Conference of the Council was held at the Auditorium Hotel, Chicago, Saturday, May 12, 1906.

There were present delegates from state examining boards, state medical societies, government medical services, colleges of liberal arts, and other organizations, as follows:

*State Delegates:* Colorado, S. D. Van Meter, Denver; Illinois, Harrison W. Hipp, Chicago; Indiana, J. C. Webster, Lafayette, W. A. Spurgeon, Muncie; Minnesota, W. S. Fullerton, St. Paul; Mississippi, E. J. Johnson, Yazoo City; Missouri, Frank J. Lutz, St. Louis; Nebraska, S. K. Spalding, Omaha; New York, W. W. Potter, Buffalo and Charles F. Wheelock, Albany; North Dakota, H. M. Wheeler, Grand Forks; Ohio, A. Ravogli, Cincinnati and H. E. Beebe, Sidney; South Dakota, Stephen Olney, Sioux Falls; Tennessee, L. E. Burch, Nashville; Washington, P. B. Swearingen, Tacoma; West Virginia, M. H. Proudfoot, Rowlesburg; Wisconsin, W. T. Sarles, Sparta, A. P. Andrus, Ashland, and J. V. Stevens, Jefferson.

*State Medical Societies:* Indiana, J. B. Berteling, South Bend, and L. F. Page, Indianapolis; Kentucky, W. H. Wathen, Louisville; Missouri, R. M. Funkhouser, St. Louis; Minnesota, F. F. Wesbrook, Minneapolis; Illinois, J. W. Pettit, Ottawa, and D. B. Phemister, La Grange.

American Medical Association, Geo. H. Simmons, Chicago; Committee on Reciprocity, American Medical Association, William L. Rodman, Philadelphia; Association of American Medical Colleges, F. C. Zapffe, Chicago; National Confederation of Eclectic Medical Colleges, E. J. Farnum, Chicago, and E. G. Trowbridge, Chicago; American Medical Editors' Association, W. C. Abbott, Chicago, William F. Waugh, Chicago; Public Health and Marine-Hospital Service, Passed Asst. Surg. G. B. Young, Chicago.

Others present were:

Dr. B. D. Myers, Indiana University, Bloomington; Professor J. H. T. Main, President of Iowa College, Grinnell; Dr. S. W. Lambert, Columbia University, New York City; Dr. Frederic S. Dennis, Cornell University, New York City; Dr. Chas. R. Bardeen, University of Wisconsin, Madison; Dr. John M. Dodson, Rush Medical College, Chicago; Dr. F. C. Waite, West-

ern Reserve University, Cleveland: Professor I. B. Burgess, Morgan Park Academy, Morgan Park, Illinois.

The delegates from the following states, appointed by the respective governors, were absent:

Alabama, W. H. Sanders; Arkansas, J. P. Runyan; Connecticut, E. K. Root; Delaware, E. W. Cooper and J. H. Wilson; Florida, J. D. Fernandez; Georgia, J. B. S. Holmes; Idaho, J. L. Conant, Jr.; Iowa, F. W. Powers; Kansas, O. F. Lewis; Louisiana, C. D. Simmons; Montana, George H. Barbour; New Jersey, E. L. B. Godfrey; North Carolina, Charles O'H. Laughinghouse; Oregon, A. C. Pantou; Pennsylvania, Winters D. Hamacker; South Carolina, R. A. Bratton; Texas, S. R. Burroughs; Virginia, Jacob Michaux and R. W. Martin; Wyoming, E. P. Rohrbaugh.

The Council met at 10 a. m. and was called to order by the Chairman, Dr. Arthur Dean Bevan, of Chicago, who delivered the following address:

#### CHAIRMAN'S ADDRESS.

*Gentlemen, Delegates from the State and Territorial Licensing Bodies, from the State Medical Societies, the United States Army and Public Health and Marine-Hospital Services, and Invited Guests from Schools of Liberal Arts:*

The Council on Medical Education of the American Medical Association has invited you to this second annual conference to discuss the subject of medical education in America, to ask your advice and co-operation in the effort to elevate the standards of education in this country, a result which we are all equally anxious to accomplish.

We welcome you to this conference and thank you in the name of the American Medical Association for your interest and for your presence here to-day.

We have felt that the conference held last year was of much service in enabling the Council to better understand existing conditions and to more intelligently formulate the recommendations which it was to submit to the American Medical Association. As a result of the conference of last year the Council submitted the following standards at the Portland meeting:

#### THE IDEAL STANDARD.

3. The ideal standard to be aimed at from our present viewpoint should consist of:

a. Preliminary education sufficient to enable the candidate to enter our recognized universities, the passing upon such qualifications by the state authorities.

b. A five-year medical course, the first year of which should be devoted to physics, chemistry and biology, and such arrangements should be made that this year could be taken either in a school of liberal arts or in the medical school. Of the four years in pure medical work,



the first two should be spent in laboratories of anatomy, physiology, pathology, pharmacology, etc., and the last two in close contact with patients in dispensaries and hospitals in the study of medicine, surgery, obstetrics and the specialties.

c. A sixth year as an interne in a hospital or dispensary should then complete the medical course.

Under such a scheme the majority of men would begin the study of medicine between 18 and 19 years of age and would graduate from the hospital internship at from 24 to 25. A college education is recognized as a desirable preparation for a limited number of men, but it is thought that it is not and never will be desirable to make such college education a requirement to the study of medicine, as it would make the age of graduation from 27 to 28 years, which is regarded as too old a period at which the young medical man should begin his life's work. It is obvious that this very desirable scheme of requirements can not be at once demanded or recommended.

#### STANDARD NOW RECOMMENDED.

4. Under present conditions what requirements can the American Medical Association demand by reason of giving to them its official sanction? It would seem to the Council that the following scheme is reasonable and could be made effective:

a. A high school education or such education as will admit the student to our recognized universities. This requirement to be passed on by specially designated state authorities, such as the superintendent of public instruction or his representatives, and not by the faculty of the medical school.

b. A four-year course in a medical college, each year of at least 30 weeks, with 30 hours per week of actual work (exclusive of holidays), no two courses to be taken in the same year. This course to be approved by a conference between the Council on Medical Education and the state and territorial licensing boards and college authorities.

c. The graduation from such an approved school should simply entitle the candidate to an examination before the state examining board.

d. The passing before a state licensing board of a satisfactory examination and the securing of a license to practice.

The purpose of the Council during the last year has been and shall continue to be until accomplished the securing of the general adoption of the standards now recommended.

In order to obtain the general adoption of these basic principles the co-operation of the state licensing boards and the state medical societies must be secured. It has been gratifying

to note the very general approval of these basic principles by these bodies, and it is believed that within two years the standard which we recommended as a result of the last conference will be practically universally adopted.

The work of the Council during the last year has been devoted to obtaining data of the existing state of facts in regard to medical education under the following heads:

First, the medical laws of the states and territories and foreign countries; second, the standing of medical schools, as shown by the result of examinations before the various state boards; third, the work of the state boards; fourth, the character of the medical schools, their courses, equipment, facilities, etc. etc. Some of these facts will be presented to you by Dr. Colwell.

There can be no doubt but that the most important function of the Council of Education will be the careful collecting of all the facts on medical education and giving publicity to these facts, so that the state licensing bodies, the state medical societies and the medical colleges may be given an accurate presentation of existing conditions. Such publicity is bound to lead to correction and improvement. As an example, let us review briefly the work of the state licensing boards, and the standing of the medical colleges in this country, as determined by the percentage of their graduates passing such examinations.

The accompanying tables are compiled from the examinations of 1904, other tables appearing in *THE JOURNAL* for May 6, 1905. The tables for 1905 are completed and will be published shortly.

We have divided the schools of the country into four classes, according to the percentage of failures before the different state boards. Table 1 gives the percentage of failures from 0 to 10; Table 2, the percentage of failures from 10 to 20; Table 3, the percentage of failures over 20 per cent.

In addition to that, we have an unclassified list in Table 4, in which are placed the schools which have not enough data upon which to warrant their being classified. For instance, schools with less than ten students applying for examinations and schools where students have applied simply for examination in one state. I think it is rather interesting to note that the schools which we might expect would be in the first class are largely in the first class, with such a school as Harvard leading the list with the smallest number of failures. In Class 2 the failures are from 10 to 20 per cent. There are a number of good schools in Class 2. I am rather inclined to believe that by directing the attention of the faculties of these schools to the fact that they are in Table 2, it will surely be of value to the schools themselves and will, I think, lead to improvement. I know from my own personal experience that by having our attention called to the number of candidates re-

The following tables are based on the reports of State Examining Boards for the year 1904, published in the *Journal of the American Medical Association*, May, 6, 1905.

In making comparisons, besides the percentage, one must consider also the total number examined and the number of State Boards before which representatives of the college appeared.

TABLE 1.—PERCENTAGE OF FAILURES, 0 to 10.

Margin No.	College.	Total.	Regst. on Diploma.	Examined. Passed.	Examined. Failed.	Percentage Failed.	No. of States.
	CALIFORNIA.						
5.	Med. Dept. Univ. of California..	37	1	34	2	5.5	2
	COLORADO.						
11.	Denver and Gross Coll. of Med....	49	32	16	1	5.9	12
	CONNECTICUT.						
14.	Yale University Dept. of Med.....	40	..	38	2	5.0	7
	DISTRICT OF COLUMBIA.						
15.	Columbian Univ. Dept. of Med.....	73	3	67	3	4.3	16
16.	Georgetown Univ. School of Med...	43	2	37	4	9.7	14
	GEORGIA.						
20.	Medical Coll. of Georgia.....	31	1	30	0	0.0	3
	ILLINOIS.						
21.	American Med. Miss. Coll.....	19	5	13	1	7.1	12
22.	Bennett Coll. Ecl. Med. and Surg...	18	1	16	1	5.9	8
23.	Coll. of P. and S., Chicago.....	259	15	227	17	7.0	22
26.	Hahnemann Med. Coll. and Hosp...	64	9	53	2	3.6	12
28.	Hering Med. Coll.....	22	4	17	1	5.5	10
30.	Jenner Med. Coll. ....	20	..	18	2	10.0	2
31.	Northwestern Univ. Med. School..	171	10	159	2	1.3	23
32.	Rush Med. Coll.....	298	38	245	15	5.8	26
	INDIANA.						
36.	Central Coll. of P. and S.....	11	..	10	1	9.0	4
	IOWA.						
42.	Drake Univ. Coll. of Med.....	17	2	14	1	6.7	3
45.	State Univ. of Iowa, Homeo. Dept..	11	1	9	1	10.0	3
	LOUISIANA.						
58.	Tulane University, Med. Dept.....	91	2	82	7	7.8	9
	MARYLAND.						
63.	Med Dept. Johns Hopkins Univ....	59	..	58	1	1.7	20
	MASSACHUSETTS.						
68.	Boston University School of Med..	37	..	36	1	2.7	11
70.	Harvard University Med. School...	160	4	155	1	0.6	17
	MICHIGAN.						
72.	Detroit College of Med.....	36	5	28	3	9.7	16
76.	Univ. of Mich. Dept. of M. and S..	114	5	98	11	10.0	29
	MINNESOTA.						
79.	Coll. of Med. and Surg. U. of Minn.	109	3	104	2	1.9	13
	NEBRASKA.						
97.	John A. Creighton Med. Coll.....	44	4	39	1	2.5	9
	NEW YORK.						
100.	Albany Medical College.....	51	..	46	5	9.8	7
101.	Coll. of P. and S.....	246	8	229	9	3.8	26
102.	Cornell Univ. Med. Coll.....	69	..	67	2	2.8	8
103.	Eclectic Med. Coll.....	15	4	11	0	0	3
104.	Long Island Coll. Hosp.....	52	1	50	1	2.0	7
105.	N. Y. Homeo. Med. Coll. and Hosp..	33	1	31	1	3.1	7
108.	Syracuse Univ. Coll. of Med.....	37	1	36	0	0	8
109.	Univ. of Buffalo Med. Dept.....	54	4	46	4	8.0	7
	NORTH CAROLINA.						
112.	North Carolina Med. School.....	20	..	19	1	5.0	2
	OHIO.						
114.	Western Reserve Univ. Med. Coll...	36	2	32	2	5.9	10
115.	Cleveland College of P. and S.....	18	1	16	1	5.9	5
118.	Medical Coll. of Ohio.....	59	9	49	1	2.0	11

TABLE 1.—Continued.

OREGON.							
125.	Univ. of Oregon Med. Dept.....	20	1	19	0	0	3
126.	Med. Dept. Willamette Univ.....	10	..	9	1	10.0	2
PENNSYLVANIA.							
128.	Univ. of Pa. Dept. of Med.....	137	6	123	8	6.1	26
129.	Hahnemann Med. Coll. and Hosp..	86	2	81	3	3.6	16
131.	Woman's Med. Coll. of Pa.....	54	..	49	5	9.2	12
SOUTH CAROLINA.							
134.	Med. Coll. of the State of S. C....	26	..	24	2	7.7	7
TENNESSEE.							
138.	Vanderbilt Univ. Med. Dept.....	52	1	48	3	5.9	18
TEXAS.							
147.	Univ. of Texas, Dept. of Med....	22	..	22	0	0	3
VIRGINIA.							
155.	Med. Coll. of Virginia.....	58	1	53	4	7.0	6
157.	Univ. of Va., Dept. of Med.....	32	..	30	2	6.2	11

TABLE 2.—PERCENTAGE OF FAILURES, 10 to 20.

Margin No.	College.	Total.	Regt. on Diploma.	Examined. Passed.	Examined. Failed.	Percentage Failed.	No. of States.
ALABAMA.							
2.	Medical College of Alabama.....	41	..	36	5	12.2	4
CALIFORNIA.							
4.	Cooper Med. Coll.....	50	1	44	5	10.2	6
10.	Coll. of Med., Univ. of S. Cal.....	32	..	26	6	18.7	4
GEORGIA.							
18.	Atlanta Coll. of P. and S.....	43	2	36	5	12.2	11
19.	Georgia Coll. of Eclectic M. and S..	20	..	17	3	15.0	4
ILLINOIS.							
23.	Chicago Homeo. Med. Coll.....	60	7	47	6	11.3	14
27.	Harvey Med. Coll.....	25	1	20	4	16.7	8
34.	American Coll. of M. and S.....	25	..	22	3	12.0	4
INDIANA.							
37.	Med. Coll. of Indiana.....	29	6	20	3	13.0	7
IOWA.							
44.	Sioux City Coll. of Med.....	20	1	16	3	15.8	5
46.	State Univ. of Iowa, Med. Dept....	68	3	57	8	12.4	8
MAINE.							
59.	Med. School of Maine, Bowdoin C..	32	..	27	5	15.6	6
MARYLAND.							
64.	Southern Homeo. Med. Coll.....	16	..	14	2	12.5	4
MASSACHUSETTS.							
71.	Tufts Coll. Med. School.....	71	2	59	10	14.5	11
MISSOURI.							
90.	Marion-Sims-Beaumont Coll. of M.	99	46	45	8	17.0	17
91.	St. Louis Coll. of P. and S. ....	74	29	36	9	20.0	17
94.	Med. Dept. Washington Univ....	90	44	38	8	17.4	17
NEBRASKA.							
96.	Univ. of Neb. Coll. of Med.....	51	10	36	5	12.2	9
NEW HAMPSHIRE.							
99.	Dartmouth Med. Coll. ....	15	1	12	2	14.3	9
NEW YORK.							
107.	Univ. and Bellevue Hosp. Med. C.	110	11	87	12	12.1	30
OHIO.							
120.	Miami Med. Coll. ....	45	12	27	6	18.2	11
121.	Ohio Med. Univ. ....	68	7	49	12	19.7	20
PENNSYLVANIA.							
130.	Jefferson Med. Coll.....	224	9	189	26	12.1	34
133.	Western Pa. Med. Coll.....	76	4	59	13	18.0	7
TENNESSEE.							
137.	Med. Dept. Univ. of Nashville....	48	3	38	7	15.5	12
VERMONT.							
154.	University of Vermont Med. Dept..	88	1	72	15	17.2	12
VIRGINIA.							
156.	University Coll. of Med.....	40	..	35	5	12.5	4

TABLE 3.—PERCENTAGE OF FAILURES, OVER 20 PER CENT.

Margin No.	College.	Total.	Regt. on Diploma.	Examined. Passed.	Examined. Failed.	Percentage Failed.	No. of States.
CALIFORNIA.							
8.	Coll. of P. and S., San Francisco..	32	2	18	12	40.0	4
DISTRICT OF COLUMBIA.							
17.	Howard Univ., Med. Dept.....	37	..	22	15	40.5	14
ILLINOIS.							
24.	Coll. of Med. and Surg.....	19	..	12	7	36.8	3
29.	Illinois Med. Coll.....	67	2	51	14	21.5	19
33.	National Med. Univ. ....	30	..	21	9	30.0	5
IOWA.							
43.	Keokuk Med. Coll. of P. and S....	73	11	49	13	21.0	11
KANSAS.							
48.	Kansas Med. Coll. ....	11	1	7	3	30.0	7
KENTUCKY.							
50.	Hosp. Coll. of Med.....	101	65	20	16	44.4	14
51.	Kentucky School of Med. ....	91	41	35	15	30.0	21
52.	Louisville Med. Coll.....	78	31	35	12	25.5	16
55.	Med. Dept. Univ. of Louisville....	96	51	28	17	37.8	18
56.	Kentucky Univ., Med. Dept.....	54	22	24	8	25.0	13
LOUISIANA.							
57.	Flint Med. Coll., New O. Univ.....	18	..	8	10	55.5	4
MARYLAND.							
60.	Baltimore Med. Coll.....	125	4	92	29	24.0	26
61.	Balt. Univ. School of Med.....	75	10	20	45	69.2	14
62.	Coll. of P. and S. of Baltimore...	128	2	93	33	26.2	25
65.	Univ. of Maryland School of Med...	144	3	109	32	22.7	20
67.	Maryland Medical College.....	92	1	55	36	39.5	16
MASSACHUSETTS.							
69.	College of P. and S.....	32	..	22	10	31.2	10
MICHIGAN.							
74.	Michigan Coll. of Med. and Surg...	14	3	7	4	36.3	7
MINNESOTA.							
80.	Med. Dept. of Hamline Univ.....	41	2	23	16	41.0	5
MISSOURI.							
83.	Univ. Med. Coll. of Kansas City....	81	50	16	15	48.4	15
85.	Kansas City Med. Coll.....	41	20	10	11	52.4	12
87.	Central Med. Coll. ....	20	10	4	6	60.0	7
88.	Ensworth Med. Coll. ....	31	19	9	3	25.0	8
89.	Barnes Med. Coll. ....	144	79	45	20	30.8	24
NEBRASKA.							
98.	Lincoln Med. Coll., Cotner Univ...	31	4	21	6	22.2	5
NORTH CAROLINA.							
110.	Leonard Med. School, Shaw Univ...	34	..	12	22	64.7	6
OHIO.							
116.	Cleveland Homeo. Med. Coll.....	34	6	18	10	35.7	7
117.	Eclectic Med. Institute.....	36	3	20	13	39.3	14
122.	Starling Med Coll. ....	51	5	36	10	21.7	9
PENNSYLVANIA.							
132.	Medico-Chirurgical Coll. of Phila...	106	4	81	21	20.8	16
TENNESSEE.							
135.	Tennessee Med. Coll. ....	12	2	4	6	60.0	5
139.	Univ. of Tenn. Med. Dept.....	50	7	25	18	41.8	13
140.	Meharry Med. Coll. ....	53	7	32	14	30.4	14
141.	Memphis Hospital Med. Coll. ....	162	1	102	59	36.7	13
142.	Univ. of the South.....	72	2	34	36	51.4	17
144.	Chattanooga Med. Coll. ....	46	2	29	15	34.1	10



TABLE 4.—UNCLASSIFIED COLLEGES.

In this table are all colleges having less than 10 graduates examined, having all examined in the home state, or otherwise showing insufficient data to allow comparison.

Margin No.	College.	Total.	Regt. on Diploma.	Examined. Passed.	Examined. Failed.	Percentage Failed.	No. of States.
	ALABAMA.						
1.	Birmingham Med. Coll.....	4	..	4	0	0	2
	ARKANSAS.						
3.	Med. Dept. Arkansas Univ.....	3	..	2	1	33.3	2
	CALIFORNIA.						
6.	California Med. Coll.....	12	4	3	5	62.5	3
7.	Hahnemann Med. Coll., Pacific.....	9	1	7	1	12.5	2
	COLORADO.						
12.	Denver Homeo. Coll.....	6	6	..	..	0.0	1
13.	Colorado School of Med.....	22	15	7	0	0.0	9
	ILLINOIS.						
35.	Dearborn Med. Coll.....	18	..	18	0	0	1
	INDIANA.						
38.	Physio-Med. Coll. of Ind.....	5	..	4	1	20.0	3
39.	Eclectic Med. Coll. of Indiana.....	2	..	2	0	0	1
40.	Ft. Wayne Coll. of Med.....	4	1	1	2	66.7	3
41.	Indiana Univ. School of Med.....	1	0	1	0	0	1
	MISSOURI.						
47.	Coll. of P. and S., Kansas City..	1	..	1	0	0	1
	KENTUCKY.						
53.	Louisville Nat. Med. Coll.....	1	..	1	0	0	1
54.	Southwestern Homeo. Med. Coll....	8	8	..	..	..	2
	MARYLAND.						
66.	Women's Med. Coll. of Baltimore..	3	2	1	0	0	2
	MICHIGAN.						
73.	Detroit Homeo. Med. Coll. ....	3	..	2	1	33.3	3
75.	Grand Rapids Med. Coll.....	1	..	1	0	0	1
77.	Univ. of Michigan, Homeo. M. C....	6	2	3	1	25.0	4
	MINNESOTA.						
78.	Coll. of Homeo. Med. and Surg.....	4	..	3	1	25.0	3
	MISSOURI.						
82.	Medico-Chirurgical College.....	22	16	4	2	33.3	6
84.	Kansas City Hahnemann Med. Coll.	14	8	3	3	50.0	6
86.	Eclectic Med. Univ. ....	17	14	2	1	33.3	4
92.	American Medical College.....	14	9	1	4	80.0	6
93.	Homeo. Med. Coll. of Missouri....	16	11	1	4	80.0	6
95.	Univ. of State of Missouri.....	15	13	2	0	0	4
	NEW YORK.						
106.	N. Y. Med. Coll. and Hosp for Wom.	10	1	9	0	0	2
	NORTH CAROLINA.						
113.	Med. Dept. Univ. of N. C.....	4	..	4	0	0	1
	OHIO.						
119.	Pulte Med. Coll. ....	11	3	5	3	37.5	2
123.	Toledo Medical College .....	8	2	3	3	50.0	3
	PENNSYLVANIA.						
127.	Temple Coll. of Phila., Dept. of M..	1	..	1	0	0	1
	TENNESSEE.						
136.	Knoxville Med. Coll. ....	3	..	0	3	100.0	3
145.	Univ. of West Tenn. Med. Dept....	3	..	2	1	33.3	2
	TEXAS.						
146.	Med. Dept. Fort Worth Univ. ....	4	..	4	0	0	2
148.	Baylor Univ. Coll. of Med. ....	2	..	1	1	50.0	2
150.	Dallas Med. Coll. ....	7	..	3	4	57.1	4
	WISCONSIN.						
159.	Milwaukee Med. Coll. ....	7	..	5	2	28.5	3
160.	Wisconsin Coll. of P. and S.....	5	..	3	2	40.0	3



jected during this year has placed the faculty with which I am connected upon its mettle. They all feel that it must be within their power to pay more careful attention to the final examinations to prevent the graduation of those students who later fail before state boards.

In Class 3 we will find some thirty-eight schools, with a percentage of failures of more than 20 per cent. It is evident from a study of the medical schools in this country and their work that there are five specially rotten spots which are responsible for most of the bad medical instruction. They are Illinois, Missouri, Maryland, Kentucky and Tennessee. In Table 3 this fact is very well shown. Beginning, for example, with these five states, you will find in Illinois a group of colleges with 36.8 per cent., 21.5 per cent. and 30 per cent. of failures. You find in Kentucky, for instance, a group of five colleges, with 44 per cent., 30 per cent., 25 per cent., 37 per cent. and 25 per cent. of failures. You find in Maryland a group of five colleges with 24 per cent., 69.2 per cent., 26.2 per cent., 22.7 per cent. and 29.5 per cent. of failures.

You find in Missouri in a group of five colleges the following percentage of failures: 48.4 per cent., 52.4 per cent., 60 per cent., 25 per cent., 30.8 per cent.

Lastly, you find in Tennessee a group of six colleges the percentage of failures 60 per cent., 41.8 per cent., 30.4 per cent., 36.7 per cent., 51.4 per cent. and 34.1 per cent.

The principal cause for this bad work is found in the existence of medical schools which are conducted for profit. At our last conference we called attention to the fact that the time had arrived when a medical school could not be properly conducted from the fees of students and pay a profit to its faculty as a business investment. If we are to raise the standard of medical education in this country to a point where it ranks with the other great countries of the world the medical school for profit must cease to exist.

Tables 5 and 6, which are also taken from the large tables published in *THE JOURNAL* of the American Medical Association, May 6, 1905, show comparatively: (1) the severity of examinations conducted by the various state examining boards and (2) the apparent leniency shown to colleges of the home state as compared with colleges of other states.

In these tables we find evidence that is of interest and may prove to be of service to the state boards themselves. The general proposition is that the percentage of rejections by state boards varies from 76 per cent. to 0 per cent. These tables, however, have but a comparative value. In making comparisons a number of other points must be considered. Some states (New York, for example) scrutinize the credentials of and reject many candidates before they come to the examination, thereby reducing the percentage of rejections by examination. States allowing non-graduates to come up for examination

TABLE 5.

Showing totals and percentages rejected on examination by State Examining Boards of applicants from (1) all colleges; (2) colleges in the home state and (3) colleges of other states.

State Examining Board of	Colleges All States.				Colleges of Home State.				Colleges of Other States.						
	Total.	Regist. without Examination.	Examined; Passed.	Examined; Failed.	Percentage Failed.	Total	Examined. Percentage of All Examined.	Examined; Passed.	Ex amined; Failed.	Percentage Failed.	Total	Examined. Percentage of All Examined.	Examined; Passed.	examined; Failed.	Percentage Failed.
*Alabama...	138	..	118	20	14.5	58	27.5	37	1	2.6	100	72.5	81	19	29.0
Arizona...	35	..	28	7	20.0	a	..	..	..	..	35	100.0	28	7	20.0
Arkansas...	152	..	115	37	24.3	..	1.3	1	1	50.0	150	98.7	114	36	24.0
Califor ia...	296	..	216	80	27.0	145	49.0	121	24	16.5	151	51.0	95	56	37.0
*Colorado...	388	375	3	10	76.1	..	..	..	..	..	13	100.0	2	10	76.1
Connecticut...	93	..	67	26	28.0	23	24.7	21	2	8.7	70	75.3	46	24	34.3
Delaware...	11	..	10	1	9.0	a	..	..	..	..	11	100.0	10	1	9.0
Dis. of Col...	92	..	78	14	15.2	71	77.2	63	8	10.1	21	22.8	15	6	28.6
Georgia...	114	..	110	4	3.5	66	57.9	66	0	0.0	48	42.1	44	4	8.1
†Florida...	..	..	..	..	..	a	..	..	..	..	..	..	..	..	..
Idaho...	39	..	23	16	41.0	a	..	..	..	..	39	100.0	23	16	41.0
Illinois...	762	..	728	34	4.5	588	77.2	564	24	4.1	174	22.8	164	10	5.7
Indiana...	174	..	150	24	13.8	29	16.7	27	2	6.9	145	83.3	123	22	15.1
Iowa...	290	..	238	52	17.9	132	45.5	120	12	9.0	158	54.5	118	40	25.3
Kansas...	77	..	64	13	16.8	1	1.3	1	0	0.0	76	98.7	63	13	16.8
Kentucky...	265	255	4	6	60.0	1	10.0	0	1	100.0	9	90.0	4	5	55.6
Louisiana...	140	..	120	20	14.3	64	45.7	59	5	7.9	76	54.3	61	15	19.7
Maine...	74	..	66	8	10.8	26	35.1	21	5	19.3	48	64.9	45	3	6.2
Maryland...	187	..	121	66	35.3	160	85.5	105	55	34.3	27	14.5	16	11	40.7
*Mass...	397	..	320	77	19.4	181	45.5	170	11	6.7	216	54.5	150	66	30.5
Michigan...	53	..	52	1	1.9	0	75.4	39	1	2.5	13	24.6	13	0	0.0
Minnesota...	161	..	134	27	16.7	92	57.1	80	12	13.0	69	42.9	54	15	21.8
*Mississippi...	249	..	119	130	52.2	b	..	..	..	..	249	100.0	119	130	52.2
†Missouri...	299	299	..	..	..	..	..	..	..	..	..	..	..	..	..
Montana...	31	..	21	10	32.2	a	..	..	..	..	31	100.0	21	10	32.2
Nebraska...	100	..	93	7	7.0	79	79.0	73	6	7.5	21	21.0	20	1	4.8
Nevada...	2	..	2	0	0.0	a	..	..	..	..	2	100.0	2	0	0.0
New Hamp...	42	..	33	9	21.4	3	7.2	3	0	0.0	39	92.8	30	9	23.0
New Jersey...	96	..	76	20	20.8	a	..	..	..	..	96	100.0	76	20	20.8
New Mexico...	11	..	9	2	18.1	a	..	..	..	..	11	100.0	9	2	18.1
New York...	729	..	667	62	8.5	486	66.7	472	14	2.9	243	33.3	195	48	19.7
N. Carolina...	93	..	74	19	20.4	27	29.1	24	3	11.2	66	70.9	50	16	24.5
N. Dako a...	67	..	54	13	17.9	a	..	..	..	..	67	100.0	54	13	19.5
Ohio...	349	..	236	113	5.2	187	75.1	177	10	5.4	62	24.9	59	3	4.8
*Oklahoma...	66	..	30	36	54.5	b	..	..	..	..	66	100.0	30	36	54.5
Oregon...	76	..	70	6	7.9	24	31.6	24	0	0.0	52	68.4	46	6	11.5
Penn...	581	..	460	121	20.8	409	70.4	356	53	12.9	172	29.6	104	68	39.5
R. Island...	57	..	52	5	8.9	a	..	..	..	..	57	100.0	52	5	8.9
S. Carolina...	55	..	49	6	10.9	a	..	..	..	..	55	100.0	49	6	10.9
S. Dakota...	48	..	36	12	25.0	a	..	..	..	..	48	100.0	36	12	25.0
*Tennessee...	273	..	166	107	39.2	117	42.5	91	26	22.2	156	57.5	75	81	51.9
*Texas...	188	5	96	87	42.0	26	14.2	23	3	11.5	157	85.8	73	84	53.5
Utah...	38	..	31	7	18.4	a	..	..	..	..	38	100.0	31	7	18.4
Vermont...	55	..	54	1	1.8	37	67.3	37	0	0.0	18	32.7	17	1	5.6
Virginia...	175	..	121	54	30.8	71	40.6	64	7	9.9	104	59.4	57	47	45.1
Washington...	181	..	135	46	25.4	a	..	..	..	..	181	100.0	135	46	25.4
*W. Virginia...	203	..	163	40	19.7	b	..	..	..	..	203	100.0	163	40	19.7
Wisconsin...	67	..	60	7	10.4	4	5.9	2	2	50.0	63	94.1	58	5	7.9
Wyoming...	65	65	..	..	..	a	..	..	..	..	..	..	..	..	..
	8934	993	5672	1363	19.3	3129	44.7	2841	288	9.2	3867	55.3	2808	1059	27.4

Totals of the first group contain graduates of foreign colleges and undergraduates, which are not contained in groups two and three.

\* Non-graduates allowed to take examinations. † Impossible to get data, as items were not recorded. a, States have no medical colleges. b, States graduating no students.

TABLE 6.

Arranged in order of the percentage rejected by each State Examining Board, showing number examined and percentage rejected from (1) all colleges, (2) home colleges and (3) colleges of other states.

State Examining Boards of	Colleges. All States.		Colleges. Home State.		Colleges. Other States.	
	Total Examined.	Percentage Failed.	Total Examined.	Percentage Failed.	Total Examined.	Percentage Failed.
*Colorado . . . . .	13	76.1	. . . .	. . . .	13	76.1
Kentucky . . . . .	10	60.0	1	100.0	9	55.6
*Oklahoma . . . . .	66	54.5	. . . .	. . . .	66	54.5
*Mississippi . . . . .	249	52.2	. . . .	. . . .	249	52.2
*Texas . . . . .	183	42.0	26	11.5	157	53.5
Idaho . . . . .	39	41.0	. . . .	. . . .	39	41.0
*Tennessee . . . . .	273	39.2	117	22.2	156	51.9
Maryland . . . . .	187	35.3	160	34.3	27	40.7
Montana . . . . .	31	32.2	. . . .	. . . .	21	32.2
Virginia . . . . .	175	30.8	71	9.9	104	45.1
Connecticut . . . . .	93	28.0	23	8.7	70	34.3
California . . . . .	296	27.0	145	16.5	151	37.0
Washington . . . . .	181	25.4	. . . .	. . . .	181	25.4
South Dakota . . . . .	48	25.0	. . . .	. . . .	48	25.0
*Arkansas . . . . .	152	24.3	2	50.0	150	24.0
New Hampshire . . . . .	42	21.4	3	0.0	39	23.0
New Jersey . . . . .	96	20.8	. . . .	. . . .	96	20.8
Pennsylvania . . . . .	581	20.8	409	12.9	171	39.5
North Carolina . . . . .	93	20.4	27	11.2	66	24.5
Arizona . . . . .	35	20.0	. . . .	. . . .	35	20.0
*West Virginia . . . . .	203	19.7	. . . .	. . . .	203	19.7
*Massachusetts . . . . .	397	19.4	181	6.7	216	30.5
Utah . . . . .	38	18.4	. . . .	. . . .	38	18.4
New Mexico . . . . .	11	18.1	. . . .	. . . .	11	18.1
North Dakota . . . . .	67	17.9	. . . .	. . . .	67	17.9
Iowa . . . . .	290	17.9	132	9.0	158	25.3
Kansas . . . . .	77	16.8	1	0.0	76	82.8
Minnesota . . . . .	161	16.8	92	13.0	69	21.8
District of Columbia . . . . .	92	15.2	71	10.1	21	28.6
*Alabama . . . . .	138	14.5	38	2.6	100	29.0
Louisiana . . . . .	140	14.3	64	7.9	76	19.7
Indiana . . . . .	174	13.8	29	6.9	145	15.1
South Carolina . . . . .	55	10.9	. . . .	. . . .	55	10.9
Maine . . . . .	74	10.8	26	19.3	48	6.2
Wisconsin . . . . .	67	10.4	4	50.0	63	7.9
Delaware . . . . .	11	9.0	. . . .	. . . .	11	9.0
Rhode Island . . . . .	57	8.8	. . . .	. . . .	57	8.8
New York . . . . .	729	8.5	486	2.9	243	19.7
Oregon . . . . .	76	7.9	24	0.0	52	11.5
Nebraska . . . . .	100	7.0	79	7.5	21	4.8
Ohio . . . . .	249	5.2	187	5.4	62	4.8
Illinois . . . . .	762	4.5	588	4.1	174	5.7
Georgia . . . . .	114	3.5	66	0.0	48	8.1
Michigan . . . . .	53	1.9	40	2.5	13	0.0
Vermont . . . . .	55	1.8	37	0.0	18	5.6
Nevada . . . . .	2	0.0	. . . .	. . . .	2	0.0
	7035	19.3	3129	9.2	3867	27.4

\* Non-graduates allowed to take examinations.

#### HISTORY.

Then followed a brief history of this standard, stating that it was the result of three conferences held by the Council, one at Philadelphia in December, 1904, one at Chicago in April, 1905,

would have and should have a large percentage of failures. Colorado leads the list with 76 per cent. of rejections. However, in this state there were only thirteen men who submitted to a written examination, most of the applicants being granted license after a careful inspection of their credentials. The candidates whose credentials were not accepted were offered the opportunity to take a state board examination, but when they found an examination was necessary many refused to come up for it. In the general result, given at the foot of the columns, we find there were 7,035 students from all colleges examined before state boards with an average percentage of failures of 19.3.

An interesting point, too, is found in the separation of failures into two classes: one, the failures by students from colleges of the home state, and the other from colleges of outside states. I think there is food for reflection in these figures. Of 3,129 students examined by the state boards of the same states in which colleges were located, there was 9.2 per cent. failures; from outside colleges some 27.4 per cent. of failures. This is a comparative statement, but one of some value, and it is one which should be carefully analyzed. Undoubtedly one reason for the greater percentage of failures of students from colleges without the state is that the recent graduate usually appears before his own state board at a time when he is best prepared to pass a written examination. Many practitioners moving from one state to another appear before the state board years after their graduation at a period when they are not as well qualified to take such an examination. Then some states (New York, for example) having a high class of medical colleges would naturally have a smaller percentage of rejections from their own colleges than from colleges outside the state.

The more the subject of medical education in this country is studied the clearer it becomes that the two agencies which must be relied on to elevate the standard of medical education are:

1. The state licensing boards, which have the legal power to enforce the laws regulating the practice of medicine.
2. The medical profession of each state, which must see to it that the state possesses efficient medical legislation, and, what is even more important, that the right sort of men are placed on the state board.

Acting in harmony, these two agencies can demand and secure satisfactory standards practically at once. The power to control medical practice is and always will be exercised by the state governments.

A national body, such as the American Medical Association, can only be of service in this movement by acting as a central bureau of information, which will collect all the evidence of existing conditions and furnish this evidence to the state boards and to the medical profession of the various states and to the

medical schools. Publicity is often the best cure of an evil. Such a central body can be of service by formulating on the basis of this evidence a minimum standard as to preliminary requirements, medical curriculum, etc., the general adoption of which would result in higher requirements and greater uniformity.

We shall discuss this morning the relation of the state examining board to medical education, and the relation of the state medical society to medical education. We hope that these subjects will have the fullest discussion and that we can have the views of each delegate.

In the afternoon session we will discuss the preliminary education of the medical student, the subject of advanced standing for work done in medical subjects in colleges of liberal arts and the subject of medical curriculum.

Gentlemen, we are here with a common purpose. We are here to aid, as much as is in our power, in elevating the standards of medical education in this country.

Again allow me, in the name of the American Medical Association, to welcome you to this second annual conference.

The next order was the report of the work of the Council for the past year by the Assistant Secretary, DR. N. P. COLWELL, of Chicago.

## REPORT OF THE WORK OF THE COUNCIL FOR THE PAST YEAR.

Headquarters for the Council have been arranged for in the American Medical Association Building, 103 Dearborn Avenue, Chicago, and the necessary equipment has been provided.

For the past year the report of work accomplished and under way is as follows:

### I. PUBLICATION OF THE STANDARDS ADOPTED BY THE AMERICAN MEDICAL ASSOCIATION.

In order to do this, reprints of the Report of the Council at the Portland session of the Association, including the ideal standard as well as the standard recommended at the present time, were prepared. A leaflet was also printed containing the standard now recommended, which is as follows:

#### STANDARD NOW RECOMMENDED.

The standard requirements now recommended prerequisite to the practice of medicine consist of five cardinal points:

1. Preliminary requirements to be a high school education or its equivalent, such as would admit the student to one of our recognized universities.

2. Preliminary requirements to be passed on by a state official, such as the superintendent of public instruction, and not by an official of the medical college.

3. A medical education in a medical college, having four years of not less than 30 weeks each year of 30 hours a week of actual work.

4. Graduation from an approved medical college required to entitle the candidate to an examination before a state examining board.

5. The passing of a satisfactory examination before a state examining board.



and one at Portland in July, 1905, that the Chicago meeting was a conference with representatives of state examining and licensing boards, government medical services, associations of medical colleges and of colleges of liberal arts; and that the standard was reported to the American Medical Association, amended by a special reference committee, and adopted by the Association at the Portland session in July, 1905.

Copies of this leaflet were sent to every state board, to officers of all state medical societies, to governmental services, to local committees on medical education and to the medical colleges of the United States.

## II. STANDARDS IN THE VARIOUS STATES.

In order to ascertain just what conditions prevailed in the various states and territories, a circular letter was sent to the president and secretary of each state examining board, asking definite questions regarding (1) the standard of preliminary education; (2) whether such preliminary education is passed on by a state official or not; (3) who this official should be; (4) the standard medical curriculum held by the state, and (5) whether or not lists of colleges are kept showing which were recognized and which not. Answers to this letter were received from all but six states and from these six the conditions have been since learned through other reliable sources, so that our data is practically complete. From these replies the following facts have been deducted: (See also Table 7)

### VARIATION IN LAWS.

In the wording of the laws regarding the standards of preliminary education required in the various states, there is a great variety of statements, some of them being quite indefinite, so that it is difficult to deduct positive conclusions. There are nine states, Colorado, Illinois, Indiana, Iowa, Michigan, New Jersey, New York, Ohio and Vermont, which require a four-year high-school diploma or equivalent as a minimum standard. There are five states which apparently hold the same requirements since they have adopted the standard of the Association of American Medical Colleges; these are California, Maryland, Nevada, North Dakota and Virginia. The laws of Connecticut, Kentucky, Missouri, New Hampshire and Wisconsin recognize a "diploma from an accredited (or registered, commissioned or approved) high school"; Nebraska requires a diploma from "a high school of college entrance standing"; and Minnesota, New Mexico and South Dakota require "a high-school diploma" or "a high school education." Undoubtedly, some of these mean a four-year high-school course, but just how many it is impossible to determine without further correspondence. Pennsylvania's law requires only a three-year high-school education, although the board of examiners states that a four-year high-school education is practically insisted on. Three states, Arizona, Maine and Washington, require "preliminary education satisfactory to the board"; Delaware and Indian Territory require "a common school education" and South Carolina requires "a first-grade teacher's certificate." We can find no mention of preliminary requirements in the laws and regulations of 29 states.



TABLE 7.

Showing apparent inequalities and deficiencies in laws governing medical licensure, April 1, 1906.

State.	Law Includes Preliminary Requirements.	Preliminary Credentials Inspected by State Official.	Board Accepts Non-graduates.	Requires Examination of All Applicants.	Advanced Standing for A.B., B.S.	Required Years of Medical Study.	Requires Definite Courses in Curriculum.	Minimum Hours per Week.	Minimum Weeks per Year.	Required Months per Year.	Minimum Hours Each Year.	Minimum Total Hours of Course.
Alabama.....	.....	.....	.....	Yes..	.....	.....	Yes..	.....	.....	.....	.....	.....
*Alaska.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Arizona.....	.....	.....	No	Yes..	.....	.....	Yes..	.....	.....	.....	.....	.....
Arkansas.....	.....	.....	.....	Yes..	.....	.....	Yes..	.....	.....	.....	.....	.....
†California....	Yes..	Yes..	No	Yes..	.....	4	Yes..	30	30	7½	900	3600
Colorado.....	Yes..	Yes..	.....	.....	.....	4	Yes..	.....	.....	9	900	1600
Connecticut..	Yes..	.....	No	Yes..	.....	4	Yes..	36	26	6½	936	3744
Delaware.....	.....	.....	No	Yes..	.....	3	Yes..	.....	.....	.....	.....	.....
Dist. of Col..	.....	.....	No	Yes..	.....	4	Yes..	.....	.....	.....	.....	.....
Florida.....	.....	.....	No	Yes..	.....	.....	Yes..	.....	.....	.....	.....	.....
Georgia.....	.....	.....	No	Yes..	.....	3	Yes..	.....	.....	6	.....	.....
Idaho.....	.....	.....	No	Yes..	.....	.....	Yes..	.....	.....	.....	.....	.....
Illinois.....	Yes..	Yes..	No	Yes..	.....	4	Yes..	30	7½	800	3200	.....
Indiana.....	Yes..	Yes..	No	Yes..	.....	4	Yes..	36	30	7½	1080	4320
Indian Ter..	.....	.....	.....	.....	.....	4	Yes..	.....	.....	6	.....	.....
Iowa.....	Yes..	Yes..	No	Yes..	No	4	Yes..	.....	26	7	.....	.....
Kansas.....	Yes..	.....	No	Yes..	.....	4	Yes..	.....	.....	6	.....	.....
Kentucky.....	Yes..	Yes..	No	Yes..	No	4	Yes..	30	7½	.....	.....	.....
Louisiana.....	.....	.....	No	Yes..	.....	4	Yes..	.....	.....	.....	.....	.....
Maine.....	.....	.....	No	Yes..	.....	4	Yes..	.....	.....	.....	.....	.....
†Maryland.....	.....	.....	No	Yes..	.....	4	Yes..	30	30	7½	900	3600
Mass.....	.....	.....	.....	Yes..	.....	.....	Yes..	.....	.....	.....	.....	.....
Michigan.....	Yes..	Yes..	No	Yes..	.....	4	Yes..	36	34½	8½	900	3600
Minnesota....	Yes..	.....	No	Yes..	No	4	Yes..	26	6½	.....	.....	.....
Mississippi..	.....	.....	.....	Yes..	.....	.....	.....	.....	.....	.....	.....	.....
Missouri.....	.....	.....	.....	Yes..	.....	4	Yes..	.....	.....	7	.....	.....
Montana.....	.....	.....	No	Yes..	.....	4	Yes..	.....	.....	6	.....	.....
Nebraska.....	Yes..	.....	No	Yes..	.....	4	Yes..	.....	.....	6	.....	.....
†Nevada.....	Yes..	.....	†	†	.....	4	.....	†	†	†	†	†
New Hamp....	Yes..	.....	No	Yes..	.....	4	Yes..	.....	.....	6	.....	.....
New Jersey..	Yes..	Yes..	No	Yes..	.....	4	Yes..	.....	.....	7	.....	.....
New Mexico..	.....	.....	No	.....	.....	4	.....	.....	.....	.....	.....	.....
New York.....	Yes..	Yes..	No	Yes..	No	4	Yes..	.....	.....	6	.....	.....
N. Carolina...	.....	.....	No	Yes..	.....	4	Yes..	.....	.....	.....	.....	.....
†N. Dakota...	Yes..	.....	No	Yes..	.....	4	Yes..	30	30	8	900	3600
Ohio.....	Yes..	Yes..	No	Yes..	.....	4	Yes..	.....	.....	7	.....	.....
Oklahoma.....	.....	.....	No	Yes..	.....	4	Yes..	.....	.....	.....	.....	.....
Oregon.....	.....	.....	.....	Yes..	.....	.....	Yes..	.....	.....	.....	.....	.....
Penn.....	Yes..	Yes..	No	Yes..	.....	4	Yes..	.....	.....	.....	.....	.....
R. Island.....	.....	.....	No	Yes..	.....	.....	Yes..	.....	.....	.....	.....	.....
S. Carolina...	.....	.....	No	Yes..	.....	4	Yes..	26	6½	.....	.....	.....
S. Dakota.....	Yes..	.....	No	Yes..	.....	4	Yes..	26	6½	.....	.....	0
Tennessee....	.....	.....	.....	Yes..	.....	.....	Yes..	.....	.....	.....	.....	.....
Texas.....	.....	.....	.....	Yes..	.....	.....	Yes..	.....	.....	.....	.....	.....
Utah.....	.....	.....	No	Yes..	.....	.....	Yes..	.....	.....	.....	.....	.....
Vermont.....	Yes..	.....	No	Yes..	.....	4	Yes..	.....	.....	.....	900	360.
†Virginia.....	Yes..	.....	No	Yes..	.....	4	Yes..	30	30	7½	900	3600
Washington...	.....	.....	No	Yes..	.....	4	Yes..	.....	.....	.....	.....	.....
West Virginia	.....	.....	.....	Yes..	.....	.....	Yes..	.....	.....	.....	.....	.....
Wisconsin....	Yes..	Yes..	No	Yes..	.....	4	Yes..	.....	7	.....	.....	.....
Wyoming.....	.....	.....	No	Yes..	.....	.....	Yes..	.....	.....	.....	.....	.....

\* Law proposed but not adopted as yet.

† Law provides for standards of the Association of American Medical Colleges.

## PRELIMINARY REQUIREMENTS.

Eleven states have taken some steps toward having the entrance credentials passed on by a state board or state official. In eight of these states, Indiana, Iowa, Kentucky, Michigan, New Jersey, New York, Ohio and Pennsylvania, all preliminary credentials are passed on not by the college, but by the board of examiners or state official, while in three states, Colorado, Illinois and Wisconsin, it is clear entrance examinations are conducted by the state official, but it is not clear whether other entrance credentials are inspected by this state official or by the medical college. The states in which credentials are all carefully scrutinized by the board or state official and a "certificate of qualification" is issued at the time of matriculation, are to this extent on a similar footing with British requirements where registration of every medical student before or at the time of matriculation is required. There are twelve states which still allow undergraduates to take the licensing examination. These are Alabama, Arkansas, Colorado, Indian Territory, Massachusetts, Mississippi, Missouri, Nevada, Oregon, Tennessee, Texas and West Virginia. Of these, Colorado, Indian Territory and Missouri require that the applicant must have studied four full years, while in the others there is no statement as to whether there is any requirement, so long as the applicant can pass the examination.

## ADVANCED STANDING FOR A.B., B.S.

Four states, Iowa, Kentucky, Minnesota and New York, do not sanction the giving of advanced standing to graduates of colleges of liberal arts. Minnesota and Iowa refuse to recognize any diploma from a medical school which gives such advanced standing. New York and Kentucky allow the medical school to do as it pleases, but rejects the applicant in case he has not had the full four years' course in a medical college. In 34 states provision is made requiring four full courses in separate years, three states, Delaware, Georgia and North Carolina have three years as the minimum, while 15 make no statement. Twenty-three states, or 27 if we include California, Maryland, Nevada and Virginia, have endeavored to regulate the length of the college year either by the requirements of a definite number of weeks or months. Seven of these, Georgia, Indian Territory, Kansas, Montana, Nebraska, New Hampshire and New York, place the minimum at 6 months; four, Connecticut, Minnesota, South Carolina and South Dakota, require 26 weeks ( $6\frac{1}{2}$  months); eight, Iowa, Missouri, Ohio, New Jersey, and Wisconsin, require 7 months; seven, California, Illinois, Indiana, Kentucky, Maryland, Nevada and Virginia, require  $7\frac{1}{2}$  months; North Dakota requires 8, Michigan  $8\frac{1}{2}$  and Colorado 9 months.

## MEDICAL CURRICULUM.

Only one state, Michigan, has adopted the medical curriculum setting forth a definite number of hours in definite subjects, unless we include California, Maryland, Nevada, North Dakota and Virginia, which appear to have adopted the standard of the Association of American Medical Colleges. This, if enforced, would give these states the same standard curriculum as Michigan. Five other states have endeavored, in a way, to fix a curriculum requirement, 2, Connecticut and Indiana, by stating the minimum hours per week for a definite number of weeks each year, and 3, Colorado, Illinois and Vermont, by requiring a minimum number of hours

each year. Therefore, only 6 states have arranged in any way for a medical curriculum on a basis of hours required unless we may add the 5 states named above which have adopted the standard of the Association of American Medical Colleges. Therefore, before the standard of the American Medical Association shall become the standard throughout this country, at least 29 states must provide for higher entrance requirements; 40 must provide for registration of medical students before a board of entrance examiners, or a state official at the time of matriculation; 36 should require higher requirements as to the length of year and 4 should require an examination.

#### PRELIMINARY EXAMINERS.

As to the official who should pass on the entrance credentials, the majority seem to favor a board rather than an individual; first, because to do the work thoroughly requires more than one, and again, the decisions are less apt to be criticized or to be open to suspicion. Indiana, New York and Michigan have boards. In Illinois, New Jersey, Pennsylvania and Wisconsin entrance requirements are inspected by the State Superintendent of Public Instruction (or in Illinois, superintendent of public schools); in Kentucky by an examiner certified by the state board, while in Ohio there are four different examiners at the four seats of medical education. In Colorado, the law states that the entrance examination shall "not be conducted by the medical college." Classified lists are kept by several states, notably New York and Michigan.

#### REPORTS FROM EXAMINING BOARDS.

From the replies to this correspondence and reports sent to us, there are many interesting statements, showing that the examining boards are alert to present needs and are striving to correct them.

*Connecticut.*—The following is an extract from the report of the secretary of the Connecticut State Board of Medical Examiners to the Connecticut Medical Society, July, 1905:

The committee is more and more impressed each year with the manifest lack of preliminary education shown by candidates. The work in English by an astonishing number of applicants shows that many medical colleges do not hold rigidly to their entrance requirements as published in their catalogues. There are now 163 medical colleges in this country, of which nearly 50 per cent. are insufficiently endowed to be self-sustaining and whose very existence depends on their matriculating a certain number of students each year.

There are to-day 25,179 medical students in the country, and between 5,000 and 6,000 are graduated annually; this number, with about 500 physicians emigrating to this country each year, makes an appalling total knocking at the door of an admittedly overcrowded profession.

I find that in the United States the ratio of physicians to the population is greater than in any European country. How must this condition be honestly and fairly met?

We must not only look to the united effort and pressure of the state medical examining boards, but to the medical school faculties as well. In whose hands is the power to increase the standards and hence to improve the quality of medical graduates. When the entrance requirements to the various medical schools are uniform, sufficiently high and maintained unequivocally, and when four full years of nine months each are devoted to *bona fide* medical study and the hours given to each study apportioned . . . much of the apprehension now felt on all sides will be relieved and the future provided for. A diminished but sufficient quantity of physi-

cians and an improved quality should result and commercialism in medicine be reduced to a minimum.

*Rhode Island.*—The secretary of the board suggests that the reporting of grades obtained by applicants in the various branches be reported by the examining boards to the Council on Medical Education and that these be compiled so that medical colleges may see in what departments their graduates are weak. From the experience of this board the majority of applicants are weak in pathology, hygiene and medical jurisprudence.

*South Dakota.*—From this state, as well as from Colorado and Tennessee, comes the suggestion that before medical colleges are recognized, it should be ascertained whether or not they are living up to their announced requirements.

#### CHANGES IN LAWS CONTEMPLATED.

The fact is also revealed that conditions are ripe for radical changes in medical laws in many states and that a high, definite, yet reasonable standard will be welcomed.

*Iowa.*—This state board is at present contemplating changes and is searching for the right standards.

*Missouri.*—This state has a new board which is desirous of obtaining a law giving it authority to enforce a proper entrance requirement and to insist on graduation.

*Nevada.*—This state board is hoping to amend the laws at the next session if the legislature approves the standards of the American Medical Association.

*New Mexico.*—The New Mexico board has ruled that the length of medical course as recommended by the Council on Medical Education shall be the standard in that state.

*North Carolina.*—This board, at a meeting held May, 1906, expects to take up the matter of increased requirements.

*Pennsylvania.*—The board in this state believes that at the next meeting of the legislature the law will be amended to set forth definitely the requirements for preliminary education.

*South Carolina.*—When the Council on Medical Education shall decide on definite requirements, the board believes that with the aid of their state medical society they can secure their adoption.

*Tennessee.*—This state board hopes soon to get a law insisting on graduation from a recognized medical college.

*Texas.*—Several county societies recently held meetings urging new laws governing medical practice. A call for 150 of the Council's leaflets setting forth the "five points," was promptly responded to. The report of the state committee on medical education endorsing the standard of preliminary requirements of the American Medical Association was adopted by the House of Delegates of the State Medical Association.

*Utah.*—In referring to the standard of preliminary requirements the secretary of the board writes: "I am sure we can get this as well as any other requirements we may want."

*Vermont.*—The board in this state is trying to get the interest of the profession of the state in order to obtain the enactment of a law raising the standards of preliminary and medical education.

*Virginia.*—In the near future this board expects to ask for an amendment making preliminary education compulsory.

With the great advances recently made in some of the states,



the present agitation going on as illustrated by the statements just given, augurs well for higher standards of medical education in this country.

### III. STATE ASSOCIATIONS.

Realizing that the adoption of the standard depended on the forces within each state a letter was sent to the president and secretary of each state medical association enclosing a reprint of the report of the Portland session and requesting the appointment of a local committee on education if such a committee did not already exist. To this letter replies were received from 46 states, committees were appointed in 31, while only 4 states did not reply. Of the 15 states replying, but not appointing committees, the majority preferred to wait until their next annual meeting, when the matter will be taken up. The following suggestions regarding the work of these committees was sent to each member :

#### WORK OF STATE COMMITTEES IN SECURING A HIGHER STANDARD OF MEDICAL EDUCATION.

##### OBJECT OF THE COUNCIL.

The chief object for the organization of the Council on Medical Education of the American Medical Association was to "advance the standard of medical education in the United States." It supplies the long-needed national center wherein may be collected from all sources information regarding medical colleges, students and graduates, medical standards, laws regulating medical practice, results of state board examinations and any other items bearing on medical education. This information will be arranged in such form as to make it most serviceable and disseminated to all parties interested. Such that is of general interest will be published. The council earnestly desires to co-operate with and further the work of any organization now in the field having as its object the advancement of medical education. The council, after conferences with representatives of state examining boards, government medical services, medical college associations and colleges of liberal arts, decided on a certain minimum standard.

Then followed the standard of requirements as already given with the reasons for urging the five points. (See p. 15.)

These five fundamental points should be embodied in the law or adopted as a board regulation in every state, whether that state has any medical colleges or not, since, first, they will provide that only properly trained graduates may locate in the state; second, medical colleges may be opened in some states now having none, and third, it will help to establish a uniform minimum standard which would help to make a working scheme for interstate reciprocity a possibility.

Point one establishes the minimum of preliminary requirements, and point two insures its enforcement, since some colleges, if allowed to pass on the entrance credentials, might wilfully or through neglect matriculate students having little or no preliminary education.

Point three establishes the minimum time limit during which study of medicine should be pursued, which, however, would not be efficient unless (point 4) the student was graduated, thereby having the approval of his alma mater.

Point five, regarding examinations, bears the same relation to the medical training as point two does to preliminary education. The chief value of the examination is not only to protect the state from any unfit candidate who may have slipped through the meshes of some medical colleges up to a high standard, since the graduation of poor material as shown up by failures at these examinations, would reflect against the colleges responsible.

#### WORK FOR THE STATE COMMITTEES.

That this may become the minimum standard in our country, however, it is necessary that each state adopt it, or a higher standard if they wish, and enforce its provisions.

The actual adoption and enforcement of the standard in each state

must depend on forces within the state. The Council on Medical Education of the American Medical Association can only suggest and urge. It rests with the state examining board and the state medical society through its committee on education to bring about the adoption and enforcement of the standard in each state. Therefore, the committee on education should study carefully the conditions regarding the practice of medicine in their state and see in what points the laws of their state are deficient or improperly enforced. These facts should be presented in a report to the state society and a call issued that the society energetically demand and work for amendments to the laws that shall bring the standards of the state up to, if not beyond, the minimum standard adopted by the American Medical Association.

The examining boards and boards of registration in practically all the states are doing a noble work, and in some instances either single handed or even in the face of some opposition on the part of the state association. Can they not do much more if, through the work of the committee on education, they have the enthusiastic support of the medical profession of the state back of them?

The Council at present is bending every energy to collect data which will be of service. A number of pamphlets have already been issued and others will appear as rapidly as possible and will be supplied to all committees. A book of laws and regulations governing the practice of medicine in the various states and abroad soon to be issued will allow of valuable comparisons.

The work has just been started, the field is a large one, the goal is worthy of our best efforts, and the enthusiastic support already received promises that the movement will have accelerated speed. Considering the enormous progress made in the past decade without any concerted action, what may we hope for in the next ten years with carefully laid plans and forces united?

#### REPLIES RECEIVED.

Although the above instructions were sent out just as this report was being prepared, 22 replies have been received from various committees. Practically all these express a deep interest in the work, which is very encouraging. That of Maryland, for instance, met and drew up a report for the annual meeting of the state association held in April. This report is as follows:

#### REPORT OF COMMITTEE ON EDUCATION OF MARYLAND.

##### *To the Medical and Chirurgical Faculty of Maryland:*

The committee appointed by the President of the Medical and Chirurgical Faculty to co-operate with the Council on Medical Education of the American Medical Association, beg leave to report:

That the Council on Medical Education submitted a report to the American Medical Association, dated July, 1905, in which they laid down the following guiding principles in reference to medical education:

1. One of the chief functions of the American Medical Association should be the elevation of medical education in this country, and it should be its avowed purpose to secure throughout this country, within a reasonable time, as high a standard as of any country in the world. Our position as a civilizing power and in commerce and arts and sciences demands this of American medicine.

2. The elevation from present conditions to the high standard desired must be gradually brought about in justice to all concerned, and we would not at this time recommend too sweeping changes.

In accordance with these principles, the above-mentioned Council proposed first the outlines of an ideal standard, which they believe may be attained in the future, and in addition submitted a definite standard for present adoption and recommended that these requirements be made effective by Jan. 1, 1908. This latter standard has been adopted by the American Medical Association, and is as follows:

- (a) A high-school education as will admit the student to our recognized universities. This requirement to be passed on by specially designated state authorities, such as the superintendent of public instruction or his representatives, and not by the faculty of the medical school.



(b) A four-year course in a medical college, each year of at least 30 weeks, with 30 hours per week of actual work (exclusive of holidays), no two courses to be taken in the same year. This course to be approved by a conference between the Council on Medical Education and the state and territorial licensing boards and college authorities.

(c) The graduation from such an approved school should simply entitle the candidate to an examination before the state examining board.

(d) The passing before a state licensing board of a satisfactory examination and the securing of a license to practice.

The committee appointed from this faculty has considered only the proposal with regard to the standard to be recommended for present adoption, and desire to say that they endorse unanimously this part of the report of the Council. In their opinion it embodies the requirements of a reasonable and feasible minimal standard which may be and should be enforced by every completely organized medical school in the country. They beg leave, therefore, to recommend that this faculty shall by formal resolution record its approval of the standard at present proposed by the American Medical Association, and shall direct its Committee on Medical Legislation to arrange for such changes in the medical laws of this state as shall make them conform to the provisions of this standard.

Respectfully submitted.

As to the personnel of these committees, there are among the members many of our well-known educators. It is believed that these state committees on medical education will be important factors in the elevation of medical standards, especially by working for proper medical legislation and by securing efficient men as members of the state examining boards.

In the letter sent to the president of each state association regarding the appointment of the committee on education, was also the request that they devote a portion of their annual address to the subject, "Advancement of Medical Education." Although the time of annual meetings of many societies was very near in many instances, and though the majority of the presidents probably had their addresses already prepared, nevertheless we received 17 favorable replies.

#### IV. STATE BOARD REPORTS.

A work of the utmost importance and of great value to the cause of medical education is the work of compiling the reports of the examinations for licensure conducted by the various state examining boards. At present, chief stress is laid on showing how many passed and failed from each medical college in the country, together with the percentage of failures so as to allow of comparisons between colleges. This data is tabulated so as to show (a) graduates of all years taking examinations; (b) graduates of the last year; (c) recent graduates (last five years), and (d) old practitioners (those graduating previous to the last five years. Reading from left to right gives statistics by colleges, while by reading from above downward gives the results by states. (See JOURNAL, May 6, 1905, opposite page 1476). From these large tables any number of small tables may be drawn, allowing of innumerable and valuable comparisons and deductions.

There is probably no work more beneficial to the cause of medical education than this. It is arousing the colleges to an effort to do better work. If, through this publicity, a college is enabled to learn in what departments of medical training their graduates are deficient they will be in position to strengthen that department. That medical colleges are making an effort in this direction is attested by the secretaries of several state examining boards, as well as by our correspondence with the colleges themselves.

## V. LAWS AND REGULATIONS GOVERNING THE PRACTICE OF MEDICINE.

Every state and territory has its own laws and regulations governing the practice of medicine, no two of which are worded alike. Many are so worded as to make it difficult to find out just what the requirements are. Many of the laws do not state the requirements, but give authority to the board of examiners to govern the practice of medicine by certain rulings. The work of getting the full data regarding both laws and board regulations for the purpose of compiling it in book form was begun by THE JOURNAL of the American Medical Association, but has since been turned over to the Council. This book takes up the regulations of each state under regular heads, giving officers of the board of examiners, dates of examinations, registration fees, application for licensure, college standard, exemptions, reciprocity and definitions of the law, so that whatever the reader may wish to know about the regulations in a state may be readily found.

This arrangement of the laws has filled a great need and the book is already in large demand. Not only is it a valuable handbook for secretaries of state boards, but to deans of medical colleges, physicians, medical students and others interested in medical education. This book is having a marked influence on medical legislation, since it shows just what the law requires in each state and how the requirements compare with those of other states. Each state, therefore, can see any deficiencies the more readily and efforts will doubtless be made to remedy them.

This year special effort has been made to show the requirements of each state regarding preliminary education and medical curriculum, in order that ready comparisons may be made regarding these important points. There has also been added such information regarding medical requirements abroad as could be obtained. The standards of education as recommended by the American Medical Association and by the Association of American Medical Colleges are also given. The book is still somewhat incomplete, but each edition is being improved on and it is rapidly being made more reliable.

## VI. MEDICAL COLLEGE REQUIREMENTS.

### EXISTING COLLEGES.

We have already began the compilation of data regarding the medical colleges of the United States in a manner similar to that used in the book of laws. Each college will be taken up and described under definite heads, such as complete name of college, name and population of its town, history, hospitals, dispensaries, buildings, equipment, teaching force, preliminary requirements, advanced standing, medical curriculum, requirements for graduation, fees, number of graduates, college year and dean. In regard to the college curriculum, the intention is, if possible, not only to state the subjects taught each year, but to show after each subject the number of didactic and practical or clinical hours occupied. The first edition of this book would have to be largely based on the colleges' own statements, but as our inspection of colleges progresses, it could in time be made more reliable.

## EXTINCT COLLEGES.

In this book could also appear lists showing the standing of the colleges, also an appendix giving the standards of leading medical schools abroad. This book would make it easier to keep a record of all medical colleges. At present it is necessary to have numerous shelves filled with the various catalogues of colleges, and these are easily lost. Colleges themselves are sometimes destroyed by fire and all catalogues are lost. Colleges are constantly changing their names or becoming extinct and in many instances, at times, it is very difficult to get any accurate statements regarding them.

In the back part of this book should appear a complete list of colleges which have ceased to exist, whether by merging with other colleges or otherwise; this to include the names of all fraudulent institutions, plainly labeled as such. It is interesting to note that we have a list of 154 medical colleges or nearly 50 per cent. of all the medical colleges organized in the United States, which have ceased to exist under their original names. Of these, 24 were closed as fraudulent, 52 were merged with or absorbed by other medical colleges, while 78 became extinct. There were also a large number incorporated which apparently never had a graduate.

This will combine in one book, bound in one cover, the principal facts regarding all colleges, so that instead of having to keep many files of the many catalogues it will be necessary to keep one file of these books of "Medical Colleges." While we are getting information regarding the regulation of medical practice abroad, with little more effort we can get information regarding foreign medical schools, which could appear in an appendix to this book and meet a great need on the part of our state boards in dealing with graduates of foreign medical schools.

This book will be found useful. (1) Medical Colleges could find at a glance accurate and reliable information about each and every medical college in the country. (2) State boards will appreciate this book for the same reason and in deciding whether candidates are fit to be licensed or not. (3) Prospective medical students would like it, but (4) its greatest value would be the comparisons allowed through the simplicity of its arrangements and in what is to be hoped for particularly, its ultimate reliability.

## VII. STATISTICS REGARDING MEDICAL STUDENTS.

The work of collecting and publishing statistics regarding standards of medical colleges, medical college graduates and medical students, so ably conducted by THE JOURNAL for the past five years, will hereafter devolve on the Council of Medical Education. From these statistics may be learned the total number of medical students in this country, from what states they come and from what colleges, whereas by the state board examination tables we learn how they compare in ability to pass examinations and see where the majority are locating. We obtain each year lists of the graduating classes, together with data regarding the year and place of birth of each student and a statement regarding preliminary training. This particularly for the biographical card index of physicians of the United States which the American Medical Association is endeavoring to keep.

## VIII. A COUNCIL BULLETIN OR STATE BOARD BULLETIN.

There have been received at the office of the Association letters from the secretaries of two or three state examining boards urging that the Council on Medical Education act as a central clearing house for all information regarding criminal practitioners, those presenting fraudulent credentials and others trying to defraud the public and information concerning diploma mills, etc. The idea is that the secretary of each examining board send all matters relating to such to the office of the American Medical Association, this to be published in a bulletin which would go to all state boards, in order that all secretaries might be informed regarding these disreputables and therefore be on their guard against them. This would prevent what now sometimes occurs. A man presents fraudulent credentials to one board, the fraud is discovered and the applicant rejected, but he goes on from state to state till he succeeds in eluding the vigilance of some board.

If it is not deemed advisable to issue a bulletin to state boards only, the above might be included in a "Bulletin of the Council on Medical Education," which, it appears, would be the means of saving a considerable amount on postage, since it could be sent out as second-class matter.

## OUR MAILING LIST.

The Council already has a large mailing list of those to whom its publications are to be sent. There are the presidents and secretaries of 68 separate state examining boards, there are the presidents and secretaries of 52 state or territorial medical societies; there are now local committees on medical education of three members each in 31 separate states and other states are still to be heard from. Then there are 50 or more individuals particularly interested in medical education whom we are to include in a list to receive our pamphlets, aggregating between 400 and 500 persons. When we include the deans of medical colleges this would be increased to at least 600.

## MATERIAL FOR BULLETIN.

As to material for a Council bulletin, the Book of Laws could count as one number, the proposed book of medical colleges would be a second; a complete list of graduates of all medical colleges at the end of each college year could comprise a third, while the data above mentioned regarding impostors, criminal abortionists and other disreputables could be put into a fourth, together with other important pamphlets issued by the Council. It would probably be best at first to issue the bulletin quarterly, since issues could be made more frequent later if desired. For the best results from the work of the Council on Medical Education, the above material must be sent out regularly and to the same persons. It is perfectly legitimate, therefore, that it should be sent out as a quarterly or monthly bulletin, which would give the advantage of lower postage rates.



## SUMMARY.

Therefore, to sum up, the work of the Council for the past year has been :

1. The publication of the standards adopted by the American Medical Association, by printed circulars, by letter and by requesting presidents of state associations to make the subject of medical education a portion of their annual address.

2. Ascertaining the conditions actually existing as regards licensure to practice medicine in the various states.

3. Working for the appointment of committees on medical education in connection with the state medical societies.

4. Laying plans for work through the state examining boards and through the committees on medical education to secure the adoption of the minimum standard in the various states.

5. Collecting, tabulating and publishing the results of state board examinations, showing how many passed and how many failed of the graduates of various medical colleges.

6. Compiling and publishing abstracts of the laws and board rulings governing medical licensure and in the various states and territories as well as extracts from requirements in foreign countries.

7. Compiling of facts regarding medical colleges to be issued in book form giving the seat, history, hospitals, dispensaries, buildings, equipment, teaching force, preliminary requirements, admission to advanced standing, medical curriculum, requirements for graduation, fees, number of graduates for the current year, length of college year and name of the dean, of each medical college in the United States.

8. Preparation of a list of all medical colleges which have ceased to exist under their original names, whether through merging with other colleges, or otherwise becoming extinct.

9. Securing, tabulating and publishing of statistics regarding medical students in the medical colleges of the United States and the graduating classes for the last year.

10. Collecting and filing any other obtainable information bearing upon medical education.

## CONCLUSION.

This report would be far from complete did it not contain a statement of our appreciation for the earnest co-operation extended to the Council on Medical Education by state examining boards, by state medical societies, by medical colleges and by many others from whom we have received valuable data. We have asked for and promptly received reports requiring much time and thought, which have enabled us to present practically complete tables of great value. This is true regarding the state examining board statistics. We are receiving the same courtesy on the part of the medical colleges regarding medical college statistics.

There are numerous organizations and bodies working for the advancement of medical education. Each organization can do much by itself; in fact, the work of each organization in its own particular field could not be done by other organizations. The sum total of our efforts, however, will be much greater if the

same spirit continues as in the past, whereby there may be the same earnest co-operation between all organizations working toward the same goal, the advancement of medical standards.

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### LOOKING AHEAD.

Besides the work as outlined in the foregoing reports the Council desires to add the following statement:

1. The Council is more and more impressed with the possibility of elevating the standards of medical education through the efforts of the organized profession.

2. That the two most important factors which must be considered in this movement are the state examining and licensing boards and the state medical societies.

3. The state licensing boards represent the power to execute and the state medical societies represent the best means of securing the state laws, which must be secured and executed before proper standards can be established and maintained.

4. The higher class medical schools will of their own volition adopt and maintain proper standards.

5. The lower class medical schools, "the schools for profit," must be compelled by the law executed by the state licensing boards to live up to proper standards.

6. The problem before us therefore resolves itself at present into, first: The securing of efficient medical legislation in each state through the efforts of the organized profession in each state; and, second, the securing of efficient medical men to serve on the state examining and licensing boards.

7. We believe that for the present every effort of the Association should be made to secure the adoption of the standards recommended by the House of Delegates at the Portland session, and which we believe can be accomplished as planned by Jan. 1, 1908.

The next advance in medical education in this country must be the addition of a year between the high school course and the present four-year course in the medical school, this year to be devoted to chemistry, physics, biology and languages. When this is secured our standards will be equal to those of Great Britain and other European nations.

That this desirable advance is not far off is shown by the fact that a resolution embodying this provision has just been unanimously adopted by the National Confederation of Examining Boards at their meeting in Boston. It is probable that during the year a number of state licensing boards will agree to this recommendation. If in addition to this, the thirty or forty medical schools which are doing the best work publicly announce that all students admitted after 1910 must possess these scientific requirements, this advance will be assured.



## THE STATE EXAMINING BOARD AND MEDICAL EDUCATION.

THE CHAIRMAN—Undoubtedly the most important factor in the elevation of medical education is the state examining and licensing board.

The next topic on the program is a general discussion of the work of the state examining board and the relation of the state examining board to medical education. I shall ask Dr. Wheelock, of New York, to open this discussion.

DR. CHARLES F. WHEELOCK, of New York—*Mr. President and Gentlemen of the Council:* About five minutes ago I was asked to open this discussion. After listening to the report of the Secretary it seems to me that the discussion has already been opened. The whole report of the Secretary is a very excellent discussion of the influence of the examining boards on medical education and the relations of these boards to medical education. I hardly know what to say in addition to what has been so ably set forth in this very valuable report. The examining boards stand at the entrance to the profession. Their power is supreme. They must set the standards. While their immediate function is to guard the public and the profession against the admission of unfit practitioners, they are at the same time and by the same means putting to the test the medical schools in which the candidates have been trained. Moreover, whether the medical examining boards have direct jurisdiction in the matter of preliminary education or not, their influence certainly reaches out into that field also, for success in the professional work depends on the preparation of the student at the time when he begins his professional study.

### MEMBERS OF EXAMINING BOARDS.

The organization of a board that is to exercise these important functions is a matter of great importance. It needs no argument to prove that the methods of appointing the members of these boards should be such as to secure men of high character, skilled in their profession and beyond the reach of any influence other than their own sense of duty.

The methods of appointment in the various states differ widely, but I believe that the medical profession as a whole is so jealous of its honor that good men could be secured under almost any method of appointment. In case the appointment is a purely political one I think it would be safe to assume that he would be a rash politician who would knowingly appoint to a position on such a board an unfit person. It seems to me highly important that members of the examining boards should not be members of faculties in medical schools, but at the same time equally important that the members of examining boards should keep themselves thoroughly informed as to what is being done by the faculties of the medical schools. Medical practitioners of the kind usually selected for members

of examining boards are usually very busy men. It may be difficult for them to keep in close touch with the work of the medical colleges. Probably no field of human endeavor has changed so much in the last fifteen years as the practice of medicine. The science of medicine is young and is rapidly progressing. It is a difficult matter for members of examining boards to keep in close touch with the advancements made in the science, but if they are to exercise the best kind of an influence through their examinations they must do this. I believe that the practice that has been followed in New York State of continuing on the examining board men who have proved satisfactory is a most excellent one. Sudden changes in the character of the examinations are unfair to candidates and should be, therefore, avoided.

#### WORK OF EXAMINING BOARDS.

In administering the work of the board it is of fundamental importance that even the suspicion of favoritism shall be made impossible. For this reason I believe that the results will be better if members of the board do not meet and do not know personally the candidates.

There are two distinct phases of the work connected with the licensing examinations: one purely professional, the other purely administrative. I believe it will be wise wherever possible to separate the professional from the administrative. The professional work consists in preparing the questions and in rating the answer papers. The administrative work consists in printing the questions, in conducting the examinations, in making the records and in issuing the licenses. The ideal organization requires a separation of these functions. The members of the examining boards in reading and rating the answer papers should not know whether the candidate is black or white, male or female, old or young. If anything other than the written answers is to be considered—and it is possible that in some cases other things ought to be considered—they should be considered separately. The written paper should stand by itself and be rated by itself alone; a portion of the report of the Secretary, just read, bears on this very matter. I refer to the table of comparisons between the standings of students residing in the state where the examination is held, with the standings of students from colleges outside the state. The figures here might indicate in some cases a charge of favoritism to candidates within the state. It might be very easy for a person to reason that if he wishes to practice in a certain state he must study in that state or be in danger of getting “plucked” in the licensing examination. I have heard remarks of that kind made.

#### THE NEW YORK PLAN.

You will pardon me if I say that I think the plan we have in New York State enables us to avoid everything of that

sort. Our examiners do not know the candidates. More than that, our examiners will not know the candidates. There have been a few cases in which an overanxious candidate has written to the examiner in a certain subject, given the examiner his number and asked him to take into consideration facts outside the paper itself, and the examiner has, as a consequence, absolutely refused to read or rate the paper and turned it over to some other member of the board, not because he could not read it and rate it properly, even after having received the information, but because his jealousy for the honor of the board would not permit him to give ground for even a suspicion of favoritism. Perhaps we carry this to an extreme in our state, but we think it is a good extreme.

Under these circumstances you will see that the comparison made by the Secretary between standings of home students and foreign students examined in our state can have only one meaning.

#### INFLUENCE OF EXAMINATIONS ON MEDICAL EDUCATION.

The great influence of the examining boards on medical education, of course, depends on the general character of the examinations set. Many medical schools, however lofty their ideals, must obey the great law of supply and demand. They will furnish the kind of education that is demanded for a license. The wisdom of the examining board will then be manifested in preparing questions that will require for their answers broad general scholarship, thorough training and scientific method. It is not possible for any person to know all things; hence fairness requires that in an examination which is to determine whether a person may earn a livelihood by the practice of his profession an opportunity shall be given to show what he knows. The examination should not be a means of finding out what the candidate does not know. Our experience indicates that an examination paper containing fifteen questions, from which the candidate may select ten, furnishes an adequate test and is fair to the candidate.

#### EXAMINATIONS REPRESENT MINIMUM REQUIREMENT.

Examining boards and medical schools should not overlook the fact that the examinations for license to practice represent only a minimum of requirement. We must not forget that there is a business side to the practice of medicine, that all over this country there are rural communities where physicians are needed, where the remuneration is not large, where specialists can not be maintained. It must still remain possible for men to prepare themselves for the practice of medicine in such localities, with the expectation of making the practice of medicine a business and of gaining a livelihood thereby. As a business proposition a man can not afford to spend four years in a high school, four years in college, six years in professional study, to fit himself to practice medicine in such a community.

If he is of the right sort, every day of practice and study after beginning practice will better fit him to do his work. I think we are all aware of the fact that many country physicians are among the very best all-round practitioners. This class must not be cut off. Examining boards must not, in their licensing examinations, set the standards of scientific proficiency that would be required for members of a faculty of a medical college or for expert specialists in each of the departments.

#### PRELIMINARY TRAINING.

As I have said above, the examining boards do necessarily exercise a considerable influence on the preliminary education of medical students through the professional examinations. They may exercise a very direct influence on preliminary education by a free expression of opinion wherever and whenever opportunity occurs regarding the importance of preliminary training for this most important occupation. I say *preliminary training*, and I wish to put the emphasis on the word *training*, for in my judgment the fitness of a student to enter on the study of medicine does not depend on the amount of knowledge that he possesses—except so far as this knowledge may indicate training—but that it does depend on the mental power that has been developed in him through the training. I hope that examining boards will use their influence in season and out of season for the adoption of a preliminary course of study that shall be aimed at training rather than at simply quantity of knowledge. I can say without hesitation that in my judgment a high-school course made up of Latin and Greek, mathematics and one or two sciences, with continual attention to English, is far superior in its training value to the nondescript, so-called “elective courses” that have of late years been so popular in some sections of our country. The experience of generations has proved to us the training value of such a course as I have described and I am glad to see signs of a return.

#### MEDICAL TRAINING.

In conclusion let me say that the medical course, like the high-school preparatory course, is also a training course. How many times we hear it said that a man who has been in actual practice for a few years is unable to do creditable work in an examination! He has doubtless become better fitted to practice medicine, but he has lost a large amount of detailed information that was given him in the medical school. What does remain from his course in the medical school is the training that he received. Examining boards should keep this fact clearly in mind at all times and remember that the course of study, both preliminary and professional, that makes for the best total result is the course that makes the broadest man.

The Chairman then introduced DR. FRANK J. LUTZ, of St. Louis, Mo.

*Mr. President and Gentlemen:*—The Chairman has emphasized the humor of the situation by placing in juxtaposition New York and Missouri, the one having the highest standard and the other flattered by your committee by exhibiting us on your chart as being governed by preliminary requirements and standards of medical education—desirable, I grant you—but it all holds only in a modified way. When a representative of our state is asked to say something of the relationship of the board of examiners to medical education, I might well say the “illimitable realm of thought is ours.” We have everything to accomplish. However, I hope some day to be able to report that we have accomplished something.

#### PERSONNEL OF BOARD.

Necessarily, Mr. Chairman, the personnel of the examining board is governed by the law of the particular state in which the board of examiners is appointed.

I believe the geographical distribution of the members of the board is an important item with the governor, who makes the appointments. I can not agree with the opinion that a board of examiners should not have among its members teachers in medical colleges. When no member of a board has had any experience as a teacher, two bad conditions are liable to result. Some of the questions are ludicrously easy to answer, so that a non-graduate could readily make the 75 per cent. required, or the examination was so difficult that nobody could answer the questions.

#### SCOPE OF EXAMINATION.

The scope of the examination, as a rule, is limited by law. It is limited in our state. The statute fixes the number of subjects on which examinations shall be held. It specifies that they may be partly in writing or partly oral. It specifies, too, that the board may add certain branches. In our state, bacteriology has been added within the last two years. In connection with licensing boards there should be and necessarily must be where no reciprocal relations exist between states, for the examination to be fair, a distinction made between students recently from our laboratories and the general practitioner who, perhaps, has been out of college ten years and has never attended a postgraduate course and has not embraced the opportunities for brushing up. The latter will not, as a rule, make the percentage in the fundamental branches, so called, or in the scientific branches. He will make such answers as these:

Question—“Differentiate between infection and contagion.”

Answer—“I cannot differentiate between contagion and infection, but I can illustrate what I mean: Crabs is contagious and clap infectious.” (Laughter.)



Now I venture say that he was a fair practitioner. (Laughter.)

A Voice.—“You passed him, didn't you?”

Dr. Lutz—I am afraid to tell. The greatest difficulty in our state consists in the fact that our law does not require any kind of preliminary education. It requires no college curriculum. It simply privileges anybody, regardless of whether he has any preliminary education or not, whether he has attended a school or not, to apply to the board of examiners, pay a fee and rest on what his examination may bring forth for him.

#### IRRESPONSIBLE MEDICAL COLLEGES.

If the medical colleges were to live up to the standards to which they subscribe, by being members of the Association of American Medical Colleges (and I can say this because I am an humble member of a faculty), then even the work with us would be very much easier. But so long as medical colleges exist that depend on fees from students for their existence, so long will it be difficult to enforce, even in those states where the law requires it, such a curriculum as is made standard by the American Medical Association. There are sections in this country where the medical school, the property of private individuals, has a reason for its existence. In a number of the large cities I may say that there is no occasion now for a proprietary medical college. I am speaking now of our own state. Medical schools admit students and throw the burden of their rejection on the licensing board. Medical schools permit men to go from the first and second and on through all the years of study, perhaps failing at the final examination, or successfully passing it, to come up before a board which finds in its greatest leniency that such men should never have been permitted to begin the study of medicine.

#### DUTY OF LICENSING BOARDS.

I dare say for a long time the licensing boards will be obliged to do police duty, to look after the medical colleges, to make their standard so high that if these colleges can not attain it the students will fail and the medical schools will go down, because with them, after all, it is a question of commercial relationship.

In our state I am glad to say that things are getting much better. Formerly we had the largest number of medical colleges in proportion to our population, but I am glad to say that our population has been very materially increasing and the colleges decreasing. I wish also to say that, so far as the work of our State Board of Health is concerned, I think there is a sincere desire to co-operate with the Council on Medical Education in order to bring about a better condition of affairs. We really have no regulations to make for others, as we need so many for ourselves.

DR. S. D. VAN METER, of Colorado—I am very much in the

position of the gentleman from New York, who stated that the report of the Secretary was so complete that it covered almost all the ground to be considered. However, it is with pleasure that I can agree with what has been said in this report, for the reason that it has proven the correctness of my suggestion, made a year ago, viz., that some central body should collect the data that this Council has collected and offer the same to the state boards in a suggestive way as a guide to the essential principles underlying the methods of procedure in medical licensure. It is clearly shown that it has already worked wonders in bringing about uniform, or an approach to uniform, ideas throughout the country. I must say, though, in contradistinction to what has been said by the gentleman from New York, that while I believe in eliminating the possibility of any appearance of favoritism in the method of examination, I do not agree with his suggestion that the examiner should not meet the applicant. After all, the question of medical licensure depends purely and solely on one basis, namely, that of educational and moral qualifications which will render him properly fitted to take care of the sick and injured. From some experience I must claim, and honestly adhere to the claim, that no one can judge of the qualifications of an applicant as well by the written examination method as he can or may do by personal contact.

#### MEMBERS OF EXAMINING BOARDS.

As to the question of school representation among the members of examining boards, there is room for argument pro and con. The experienced teacher can judge of the qualifications of the applicant better than he who has had no experience in teaching. On the other hand we are all human. I have seen, much to my regret, men whom I believed to be honest, sincere and conscientious, influenced in their grading of the papers of students they have taught. The solution of this problem must and ever will be a delicate one. Personally, I think the odds are in favor of having no teacher of medicine on an examining board. I approve most heartily the work of the Council in posting the members of the boards as to the progress and conditions of medical education throughout the country, believing that it is a thing that must not be neglected if good work is to be done by the members of the board. I would suggest that the Council on Medical Education lose no opportunity to intelligently and accurately post the different licensing bodies as to what is being done by the different institutions of learning throughout the country, preparatory and collegiate, also as to what is being done by the boards. No individual member, it matters not what his opportunities or facilities may be, can learn what the colleges are doing without such positive information. To accomplish this I would suggest and hope to see the Council supplement its work by securing a traveling inspector of medical colleges and boards, and, as I stated in a

recent paper in San Francisco, I would feel if I were a member of the House of Delegates that my vote for an appropriation to furnish this Council with such an inspector would be the best work I could do at the coming meeting of the American Medical Association.

#### WORK OF THE LICENSING BOARDS.

When we consider the good work that has been done by the licensing bodies throughout the country in elevating the standard of medical education, I think no member of any of these boards needs to be ashamed of the wonderful amount of good work that has been done. But it is not amiss to call attention to the fact that, although good work may be done by elevating the standard of medical education in insisting on a schedule of instruction prerequisite to examination, yet there may be likewise some concomitant evil come from such a requirement. To this point I would respectfully call attention and illustrate with two actual incidents that an insistence on these schedules of preliminary education as a prerequisite to admission to the examination has brought about. One came forcibly to my mind while in California. As you perhaps all know, California insists as a prerequisite to admission to examination a schedule or standard as adopted by the American College Association. According to Board's report, men from some of our schools were denied the privilege of entering the examination lists. One I remember particularly because he was allowed advanced standing on work done during his liberal-arts course. He was not even allowed to show his qualifications. I do not know whether he was or was not qualified, but he was not allowed to apply for examination, although a graduate of Dartmouth. The concomitant evil resulting from this schedule as prerequisite to examination is shown in something that many fail to realize, viz., the enactment of a law creating a separate and independent board for so-called non-drug practitioners. Any one who passes the California state regular board is undoubtedly a qualified and educated, competent practitioner. But they licensed something like 350 men last year, while the state board of non-drug practitioners licensed 384. If you will add the two together and draw your general average, you have lowered the standard of the licentiates to a level which does not compare with the states having one board and which requires less stringent rules for admissions to examination. To this point I would wish you to give special attention, but do not understand me for one moment to maintain the position of insisting on a lower standard of education as a prerequisite to licensure. I believe in it. Personally, I am an advocate for the ideal standard adopted by the Council last year.

#### OBTAIN BETTER MEMBERS ON THE EXAMINING BOARDS.

Let me refer to one or two more points, and then I am through. To further improve the work of the state boards, nothing better can be done than to improve the personnel of

the boards by selecting good timber for appointment. Unfortunately, the question of appointments of such members, as we have heard this morning, lies many times in paths influenced by politics. I would respectfully suggest to this Council that they or some properly appointed committee of the American Medical Association commence early and secure, or at least lend, their efforts toward securing the appointment of well-selected timber on our examining boards in every state. If there are three to be appointed in this state next spring, let them commence through a committee, irrespective of like or dislike, to select men of judicial mind who will give time and attention to studying the many features of medical licensure and leave no stone unturned to influence the governor to appoint them.

#### WRITTEN EXAMINATIONS AND THE OLD PRACTITIONER.

No one who has ever served on an examining board, where the examinations were conducted by the written method, has regretted passing a candidate if he has made a grade of 75 or 80 per cent. in all the subjects in which he was examined, because that usually means that he is qualified. But there are many other things to look at. We all know many well-qualified older practitioners can not make such grades on written examinations. In the course of five or six years it is to be hoped that great improvement will be brought about in our licensing bodies as compared with those of to-day, and especially as to the question of handling different grades of applicants. As has been said here this morning, a man ten years out of a medical college can not be examined by the same method as the recent graduate. That is true, and how to manage the problem is perplexing. Let the Council offer some general working plan as to what the standard should be for the man back of 1900, and to that end supply the solution of how to handle the old practitioner.

#### A CERTIFICATE OF QUALIFICATION SUGGESTED.

I would further suggest that it is possible for this Council to pass on the qualifications, either by investigation of their credentials or by an examination of a practitioner in the country who wishes to secure a certificate of qualification from this Council, that the Council suggest to the boards that this certificate of qualification issued by the Council be a basis of interchange of licensure throughout the country. In addition to these certificates I think the Council should recommend that the credentials of any army or navy surgeon who has passed that crucial test be accepted as evidence of qualification. Furthermore, the Council could adopt some schedule of credentials other than those applicable to old established practitioners, and, while they could not in any way force these to be accepted by the boards, if they would make the schedule sufficiently high the boards throughout the country would doubtless adopt them

and relieve the injustice that is done to-day to the old practitioners who from choice or necessity go from one state to another.

I am sure that whatever list of credentials may be adopted by the Council, Colorado will fall in line and license any one who presents such credentials, duly authenticated and duly verified.

DR. J. V. STEVENS, of Wisconsin:—I desire to say that in accepting the very courteous invitation of the President and Secretary of the Council on Medical Education to consider this topic before this conference that I also accepted and shall be governed by the wise provision incorporated in it: to be brief. Permit me to invite your attention to the consideration of this topic from the three following viewpoints: (a) Historical, (b) Present, (c) Prospective.

It would be a great presumption for me to attempt to dwell on the first, or the historical, part before many of those here who are more conversant with all the facts in the case than I am, and any time thus spent would be unprofitable, except, perhaps, to say that we are all pleased that the somewhat strained relations which have sometimes existed between medical examining boards and medical colleges has been followed by a greater degree of harmony and a better understanding of the aims and purposes of each of the parties to this relation.

That the advisory and supervisory work of the examining boards has helped the medical colleges in their efforts to elevate the standards of medical education, to improve their methods of instruction and to lengthen and strengthen their courses of study, we as medical examining boards claim is now "history."

With the invaluable help of these conferences and meetings of the American Confederation of Medical Examining and Licensing Boards, which have made it possible for us to exchange our views and to learn of and to know each other, we ought to make the present eventful when it has passed into history. Discussion of the important questions on to-day's program should lead to definite and practical results, and I am confident that it will accomplish much in this direction.

Neither of the parties to this relation should act too precipitately or radically or selfishly or at all until the existing interdependent relations have been thoughtfully considered and discussed. I am very willing to concede that most medical colleges are not only anxious but determined to afford to each one of their students the best possible training (both theoretical and clinical) that they possibly can. That a few of the more strictly commercial colleges are not in this class is, of course, greatly deplored by all of the reputable institutions and all others concerned.

As a rule I shall claim that the medical examining boards are fair, impartial and not too technical in their examinations.



If there are exceptions there are not more of them, probably, than sufficient to prove this rule. I have always claimed that the boards should particularly endeavor to so conduct their work that they can secure the approval and indorsement of as many of their reputable colleagues in the practice of medicine as possible, and thus make their position before the public and the legislatures more secure, perpetuate their existence (which has been threatened in some quarters) and gradually increase their usefulness. If a few of the boards have been frank enough to openly admit that they had no intention of permitting any more competitors to engage in the practice of medicine in some of the "health-resort states" than they could help, we are even hopeful of their conversion to better and higher ideals.

That the leaven of reciprocity has not lost its power is proven by the fact that during the past week the Green Mountain and the Lone Star states have notified Wisconsin that they will hereafter reciprocate with us.

Thus from these widely separated component parts of the United States are seen the beneficent effects of past missionary work, which has surmounted the obstacles of very different local surroundings and conditions, and, taken into account with the probable outcome of the conference to be held at Boston next month by several of the Eastern and Western states concerning terms for the establishing of reciprocal relations between those states, encourage us to look forward hopefully toward the devising of a basis that shall be accepted by all and universal reciprocity prevail.

I do not claim to feel the weight of the "mantle of prophecy" on my shoulders and only wish to say that I believe that the dreams of the past and the hopes of the present may be more than realized in the future. Also that we may come to have an ideal condition in the relations of state examining boards to medical education and that when we meet again to look both forward and backward along our pathway we shall realize somewhat more fully than we do now these intimate and important relations and indispensable necessity for conferences like these.

#### PRELIMINARY EDUCATION.

The subject of preliminary education was now taken up, the Chairman calling on Prof. Victor C. Vaughan, of the University of Michigan, to lead in the discussion.

DR. VAUGHAN:—So far as I know only two schools in this country demand a college degree as a preparation for the study of medicine. Only few schools could make this demand, and I have serious doubts whether it would be wise to require a college degree in all cases, even if the schools were in such a position that they could demand it. The American Medical College Association has recently made a very marked advance in their standard for admission to medical colleges. This standard

requires the possession of a diploma from a four-year high school, academy, college or university, or a recognized equivalent certificate, and that a student shall have 60 counts, 30 of which are fixed and 30 of which may be optional. The fixed counts are 10 in English, 10 in mathematics, 5 in Latin (this to become 10 after 1906), 5 in physics, thus making at present 30, and after 1906 35 counts. The optional counts are: Greek, 10; French, 10; German, 10; Spanish, 10; English, 10; history, 10; botany, 5; chemistry, 5; zoölogy, 5; biology, 5; physical geography, 5; physiology and hygiene, 5; drawing, 3; trigonometry, 2.

#### PRESENT MINIMUM STANDARD.

The Council on Medical Education has so far simply recommended graduation from a four-year high school. It will be seen from this that the minimum recommended by this Council is less than that demanded by the American Medical College Association, and I should have stated that the standard set by the American Medical Association has been approved by the Reciprocating State Examining Boards. In my opinion the Council on Medical Education is a little behind, and I think it should move up to what was given at the Portland meeting as the ideal standard. This Council has thought it best to move slowly and to endeavor to lift all the colleges gradually to a higher plane.

#### SPECIFIC REQUIREMENTS.

There is one question in this connection which is of great importance, and it is this: Should there be a specific requirement for the study of medicine? I believe most emphatically that there are certain things that a medical student should know before he begins the study of medicine. Medicine is a science, or it is fast becoming a science, and it is impossible for a man to get the best out of medicine unless he has certain fundamental, specific knowledge. A man must have tools to work with before he can be a skilled workman. Without these tools, however energetic he may be, however good his intentions may be, however devoted he may be to his work, he can not turn out the best results. It will be granted by all that the prospective medical student should know his own language quite thoroughly. I believe that he should have some knowledge of the classics. There is no other line of work given in our secondary schools and in our colleges and universities which requires such close observation, such thorough study, as the classics. The variety of inflection in verb, noun and adjective requires the closest attention to detail, and in my opinion it makes students as no other kind of study can. Men following the classics necessarily become close observers, and I believe that one of the greatest needs in medicine to-day is not genius, but ability and training which give attention to detail. Medicine does not need impressionists, but it does need the man

whose observation is thorough and whose conclusions are in accord with the observed facts.

#### LATIN AND GREEK.

It has seemed to me that there is a tendency in our literary schools to make learning easy. Teachers apparently seek short routes to knowledge and advertise personally-conducted tours. I doubt very much whether students entering our medical schools to-day are better prepared for the study of medicine than were their best-equipped predecessors of fifty years ago, who preceded their medical work with a thorough classical education. I do not mean to imply that every medical student should have a thorough knowledge of Latin and Greek, but I do think that a good, thorough drill in these subjects enables a man to study, to observe in detail and to do the best kind of work. I recognize the fact that many of our most eminent medical men have not had a classical training. I know that hard work will overcome many difficulties. As President Jordan, of Leland Stanford University, has said: "The world gets out of the way for the man who knows where he is going," and it matters not what his preliminary deficiencies may have been, he is going to reach his goal sooner or later.

#### FRENCH AND GERMAN.

I am thoroughly convinced that no man can get the best out of medicine without having a reading knowledge of French and German. It must be admitted that a large proportion of scientific discoveries along medical lines are announced to the world through the medium of these languages, and life is too short to wait for translations, which in a large per cent. of the cases fail to give correct and adequate transcriptions of the original statements.

#### MATHEMATICS.

Mathematics should be pursued through algebra, plane geometry, and plane trigonometry. The last mentioned should be required in order that the student may comprehend the principles of physics. I may remark here parenthetically that I can not understand how many medical schools get along without physics in their course. High school physics may be good as far as it goes, but it does not go far enough and I can not see how a man is to have any scientific comprehension of the refraction of lenses, the structure of the microscope and the use of the laryngoscope and of the cystoscope without some knowledge of physics. General biology and chemistry should be quite thoroughly understood in their more fundamental particulars, at least, by every young man before he enters upon his medical studies. Such a course as I have outlined above can not be obtained even in the best of our high schools. It will require graduation from a good high school and about two years' work in a university to fit a man for the study of medicine.

In conclusion I wish to state that in my opinion the State Boards of Medical Examiners have done more to advance medical education in this country than any other organization. They have constituted the power behind the medical colleges which has forced the onward movement.

Prof. Charles R. Bardeen, of the University of Wisconsin, was asked to continue the discussion.

PROFESSOR BARDEEN:—Professor Vaughan has covered the general subject so thoroughly, I agree in the main so fully with what he has said, that I feel I have little to add. Perhaps, however, I may add a word or two on the different types of preliminary education required for entrance to different types of medical schools. The standards of medical education recommended by the Council last year are two: the “immediately practical” as a present minimum standard, and the “ideal,” which should be aimed at as a minimum. Although I agree with Professor Vaughn that it would be well were the latter at once recommended, I fear it will be some time before we can hope for the general adoption of a higher minimum than the former.

The entrance requirements for this standard minimum four-year course recently recommended by the Association of American Medical Colleges and cited by Professor Vaughn seem to me in general excellent. I believe, however, that in addition to Latin and physics, some chemistry and some natural history should be required in the high school course from students who pass at once from the high school into the medical school. These subjects are too essential to medicine to be restricted entirely within the limits of the crowded medical curriculum and some previous acquaintance with them greatly aids their study in the medical course.

#### THE IDEAL COURSE.

In the “ideal course” recommended last year by the Association three distinct steps in the education of the physician may be discerned: the general education, the special education in the basal sciences on which medicine rests, and the education in clinical medicine.

The general education in the formal sense must be taken chiefly in the high school by those who are to devote but one year in college to physics, chemistry, and biology before entering the four-year medical course. Those who can devote more than one year to college work in preparation for medicine can take some less special studies in college. While I agree with Professor Vaughn as to the value of a thorough classical education in training the observation and the power of exact thought, I believe that the modern languages, although they seldom are, can be taught with the thorough attention to detail called for in the study of the ancient languages and that they have the additional value of being

more immediately useful. Some Latin, however, should in any case be studied. History and literature should not be neglected, for they alone give that breadth of view of human relations which the physician should have. Good training in the use of English should be insisted on. Drawing, also, is of immediate value to the physician and should be more encouraged in the education of the physician than it usually is.

#### SPECIFIC REQUIREMENTS.

While considerable latitude should be permitted in the general education of the physician, the minimum requirements for his training in the basal sciences on which medicine rests are becoming daily greater. Physics, chemistry, and general biology are as important as anatomy, physiology, bacteriology, and pathology. The latter "medical" sciences can not be at all deeply understood without a thorough laboratory training in the former. Chemists such as Pasteur and Ehrlich, physicists such as Roentgen, have given, and are likely in the immediate future still more to give medicine some of her greatest weapons for the warfare against disease. It is generally recognized that physics, inorganic and organic chemistry, and general biology can best be studied in the scientific departments of those colleges and universities which are thoroughly equipped for instruction and investigation in these sciences. The endowments of our medical schools are far too meager to permit them to teach these sciences adequately. One year, or better two years, should be devoted to these basal sciences previous to entering on the more specialized sciences which form the major portion of the first half of the four-year medical curriculum. The latter sciences, anatomy, physiology, physiological chemistry, bacteriology, pathology, and pharmacology should be thoroughly taught in any medical school which gives a complete medical course. Most of them can also be thoroughly taught in the non-medical, scientific departments of our universities and colleges which have or will provide adequate facilities. It is a mistake, I think, to discourage the establishment of departments devoted to these sciences in institutions not so situated as to have adequate clinical facilities for a complete medical course. Medicine is most inadequately endowed and we should welcome the use of the funds of colleges and universities for the development of the basal sciences of medicine. The action of Minnesota and some other states in refusing recognition to medical schools giving time credit for work done in non-medical colleges, tends to discourage the latter from devoting funds toward medical education and tends to discourage students from seeking a college education in preparation for medicine. The quality of the training given in the pre-clinical sciences in non-medical schools can easily be kept up to requirements by examinations demanded of all students seeking advanced



standing in medical schools and by the State Board examination. The facilities of non-medical institutions to teach the basal sciences can easily be inspected and passed upon by doubtful State Boards of Medical Examiners or by a committee appointed by the State Boards.

#### WORK IN NON-MEDICAL COLLEGES.

At the recent meeting of the Association of American Medical Colleges it is reported that the statement was made that "it is humanly impossible for the pre-clinical medical sciences to be taught in non-medical colleges." It is to be remembered, however, that the first thorough laboratory course in physiology in this country was conducted by H. Newell Martin, and a most productive department of pathology was conducted by W. H. Welch for some years at the Johns Hopkins University previous to the establishment of the medical department. At the University of Chicago several of the pre-clinical sciences were as adequately taught previous to the affiliation with Rush Medical College as after this affiliation. The same is true of Cornell University previous to the establishment of the medical school in New York. In a considerable number of non-medical colleges several of the pre-clinical "medical" sciences are thoroughly taught, and more would be were the State Boards and others interested in medical education to take a more liberal attitude. It is not well to say "give a four-year medical course or nothing you can do will be counted of time value in medical education." Or even to say "call the work you are doing the first year, or the first two years, the work of an incorporated medical school and it will count, otherwise not." The result of this sort of legislation is on the one hand to encourage the establishment of medical institutions weak because they attempt too much, on the other hand to discourage non-medical institutions from doing as much for medicine as they might.

#### WORK IN WEAK MEDICAL COLLEGES.

This leads me to another aspect of the general subject of medical education, although not strictly confined to the topic on which I have been asked to speak. There are a great many medical schools in this country which are endeavoring to maintain complete four-year courses, and which are making a good deal of a failure of it, as may be seen by the great percentage of students rejected in state board examinations, nearly 50 per cent. in some instances, as has already been pointed out to-day. One reason why so many of these schools fail is because they have not sufficient funds properly to teach the basal sciences. Not a few of these schools might become really useful institutions if they would give up trying to give the pre-clinical sciences and would teach only the clinical branches and the direct application of the basal sciences the latter half of the standard four-year course, plus a clin-

ical year in the hospital, perhaps. Such a school would be somewhat like several of our postgraduate medical schools, and the entrance requirements would include, in addition to physics, chemistry and biology, anatomy, physiology, physiological chemistry, bacteriology, pathology, and pharmacology, or the first two years of the standard medical course.

We should, I think, avoid restricting the teaching of medicine to four-year or to five-year medical schools, but should not only encourage the betterment of such schools, but also the establishment of clinical medical schools in connection with our endowed or public hospitals and departments of the basal sciences of medicine in connection with the better supported universities. Make the standards of medical education high, the required training thorough, but do not lose sight of principle in defining too closely the letter of the law.

#### COMPARISON WITH EUROPEAN STANDARDS.

We are still behind England and the continental countries of Europe in our standards of medical education, although we have some schools on a par with any elsewhere. When the "ideal course" outlined last year becomes the required course we shall have attained or nearly attained the foreign standard. The preliminary entrance requirements in most European countries are about equivalent to two years of college training in this country.

THE CHAIRMAN:—There is one word which should be said in regard to the subject of preliminary education of medical students, and that is this: We are all looking forward to the time when the requirements for medical education in this country will be high and satisfactory from every standpoint. I think, however, we must accept the fact that we are confronted now with conditions which are such that no very radical change can be made at once. For instance, the ideal standard which we advocated at the Portland meeting is undoubtedly not too high, and we shall be very much better off in this country when we adopt it. We must acknowledge, however, that there are sections of the country which are not as yet prepared for the adoption of this standard. At the Portland meeting the southern medical colleges were represented by a number of men who, I am sure, were very much interested in the elevation of medical education, but who felt that they were controlled very largely in their progress by their environment, and they felt that they could give the American Medical Association their support if the advances were not made too rapidly. They agreed that they would live up to the requirements of the Association if they were postponed practically until January, 1908. I do not think that it is very far in the future when all the colleges will live up to the requirements which we have advocated, and then the next step must be one of the two suggestions which have been

made, probably an additional year added to the preliminary education, a year of physics and chemistry and biology, and later the hospital year will come. If we succeed in establishing this ideal standard, within the next eight years, I believe we shall have made wonderful progress, and it seems to me that it is wiser to adopt a scheme, a minimum which will be such that it can be generally enforced rather than adopt a standard which cannot be enforced. The schools of the higher grades will, all of them, be in advance of the suggestions which we have to make. It is the school of low grade, which must pass out of existence, or which must be made to live up to a respectable standard, that will be most affected by the movement such as we are all interested in to-day.

I would suggest that we discuss this subject in connection with "Shall Advanced Standing Be Allowed to Graduates of Colleges of Liberal Arts?" I would like to hear from President Main of Iowa College.

#### SHALL ADVANCED STANDING BE ALLOWED TO GRADUATES OF COLLEGES OF LIBERAL ARTS?

PRESIDENT J. H. T. MAIN, of Grinnell, Iowa:—I may say, Mr. Chairman, that I come before this conference with some degree of embarrassment. I have discussed this question before medical bodies at various times and in various places, and it may seem to some of you that I have some special plea to make for the college. However, I wish to disclaim any purpose of that sort. I have no special privilege to ask, nor any desire to advocate anything that is not in harmony with the best interests of medical education and liberal education. I have no speech to make this afternoon. I should like, however, to put two or three propositions before you for discussion, and I shall put them in the form of questions. First, Is there a pure science fundamental to medical practice? That is to say, Is there a medical science that is pure science apart from medical science that is applied science? Is there a department in certain sciences which may be called pure science, and if there is such, is that pure science fundamental not only to medical education, but to medical practice? I do not include in that question such subjects as physics, general chemistry, or general biology, because, as I understand it, these subjects are prerequisites for medical education. They are preliminary subjects, and ought to be required of every man who enters upon a medical course. I understand that those subjects, so far as my discussion of the subject is concerned, are prerequisite to any medical education whatsoever. To make my question clearer, Is there such a pure science as embryology, histology, bacteriology or other subjects that would come under that same heading—pure sciences that are fundamental to medical practice? Are there in those sciences I have mentioned and others kindred to them, certain funda-

mental principles which belong not to medical science, but to science, which belong not to the medical school, but to the college of arts, which belong to education in the strict sense of the term, and not to any specific kind of education? Are there basic principles in bacteriology? Are there basic principles in histology, in embryology, which are fundamental to education, whether it be a scientific education of one sort or scientific education of another sort; whether it be medical education or "liberal" education? If there be such fundamental principles underlying these subjects, the question I should like to have discussed this afternoon (and determined as far as possible) is this, Can a man who is not a doctor of medicine, teach the fundamental part of those sciences? I know that certain medical gentlemen claim that histology can not be taught satisfactorily by a man who is not a doctor of medicine. And so on for the other subjects. It is claimed that the fundamental elements in these sciences, which are essential to an understanding of them, can not be taught by a man who is not a doctor of medicine, that is, can not be taught in such a way that they will be of any value whatsoever as essential elements in a medical course. I should like to have that question discussed. Is it necessary, when a man studies these subjects with the expectation of being a physician, that he should begin at once in the initial stages of the study of embryology, for instance, to study it as an applied science, to study it from the standpoint of the physician, and to study it exclusively with reference to the demands of medical practice? As a college man, as a member of a college of liberal arts, my feeling is (and I believe I voice the feeling of many) that there is a pure science that is fundamental to medical practice, a pure science which is just as large and essential an element, under modern conditions in the college of liberal arts as it is in a medical school; that there is such a pure science; that there are basic principles in that science which must be studied, mastered and understood, whether a man is to practice medicine or anything else, provided he desires to get at the essential elements of that science. Furthermore, I believe that those fundamental elements in these sciences may be taught by a man who is not technically a doctor of medicine.

#### A PURE SCIENCE ESSENTIAL TO MEDICAL EDUCATION.

There are the three views that college men usually take—that there is a pure science essential to medical education; that there are basic principles in it which may be taught successfully and satisfactorily in colleges of liberal arts; and these principles can be taught by men who are not in the strict sense of the term doctors of medicine. It has been stated, as I have intimated already, by some doctors of medicine, that histology cannot be taught from the medical point of view by a man who is not a doctor of medicine. If that be true, I would like to

ask, Is it possible for the teacher in a medical school to teach histology from two points of view, while the college man can only teach it from one point of view? Can the medical teacher teach this subject from the medical point of view and from the pure science point of view? Can he teach it in two respects, while the college man, whoever he may be and wherever he may have studied, cannot teach it except in the fundamental sense which I have described? It seems to me that a proposition of that kind will not stand. If histology is to be taught it ought to be taught as a pure science, fundamental to medicine, and I believe it can be so taught in a college of liberal arts. Please understand, I am not discussing the applied manifestations of that science. I am simply asking this, Is there a fundamental part of that science which belongs as much to the college of liberal arts as to the college of medicine? If there is such a fundamental part is it reasonable to suppose that the medical teacher can teach that fundamental part and the applied part also, while the college man can not do so? I do not think such a position will hold?

#### WHEN TO ALLOW ADVANCED STANDING.

In a general way, I believe it is to the interest of the medical school to give time credit for subjects that are taken in colleges of liberal arts, provided it can be proven that these subjects are taken under adequate conditions of teaching and equipment. It seems to me that it is very essential for the medical profession, more so probably than for any other profession, to take advantage of all the possibilities in modern training and education. If there is one profession above another which requires accuracy of training, prolonged training, skill and understanding, and power, it is the medical profession, and as a friend of humanity, I should say that the medical schools should demand in every possible way a more intensive and a more prolonged training. I am quite well aware that there may be districts on the frontier, in the mountains of Tennessee, or in the backwoods of some frontier state, where it is not possible to demand a high standard of training, but even so the medical schools ought to insist on a higher standard than at present, because of all the sciences the medical profession demands scientific accuracy and understanding. I should not advocate any system whatsoever, that would turn loose on a defenseless community youths twenty-two or twenty-three years of age without any understanding of the fundamental principles of the sciences which are essential to the medical training. That, practically, is what is done when the average high school youth is admitted to the medical school. Consequently, I should think it would be wise for the medical college to encourage the colleges of arts and obtain from that source men who are better trained than the average men they are receiving at present.



## FOUR YEARS IN MEDICINE.

To the four-year medical course, all work to be done in the medical school, I have no objection, provided the medical schools will adopt the four-year college requirement for admission. That arrangement would eliminate all the problems we have before us as colleges of arts. I am not advocating a reduction in the standard. As a college man, I should ask the medical schools to adopt as a requirement for admission the Bachelor's degree. A diploma from a high school is the maximum requirement now, with the exception of half a dozen institutions. But it looks to me that if the four-year course is long enough for a man who has graduated from a high school it is too long for the man who has graduated from a college, with his four years in addition. If it is the proper time for the college man, then it is not long enough for the high school man. One way to secure better training would be to establish medical courses of five years, giving permission to colleges of arts to secure time credit, under satisfactory conditions, for one year. It would also equalize conditions between college and high school men.

## THE COMBINED COURSE.

The question of a combined course enters into this discussion somewhat. A number of state universities have what are called combined courses. It is easy enough to make an adjustment between a medical school on one side of the street and a college of arts on the other side of the street, so that a student may take a course in medicine and a course in arts in six or seven years. If it is possible for an institution of that type to make arrangements whereby a student may reduce his time from eight to six or seven years, is it not practicable and reasonable to ask this for colleges of arts that are detached from professional schools? If it is possible for a man to go across the street and make arrangements for combining his courses, is it not possible for him to go three miles or a hundred miles to do the same thing? It seems to me the principle is exactly the same, and it is a principle on which, in some form or other, the independent colleges (I mean by the independent colleges the detached colleges) will insist. That is to say, the independent colleges that have any strength, that are able to give the subjects that are essential to a medical education the proper attention, will not yield that point. They will not admit that composite institutions may arrange such combinations while independent institutions may not.

I believe in safeguarding the medical curriculum, as I have already intimated, and there are many ways of doing that. The state boards, the medical colleges themselves, the requirements in the various examinations, will together safeguard adequately the avenues of admission to medical practice in this country; but I do object to the arbitrary decree which says

that a college of liberal arts shall not receive credit, even though it can prove that it is doing work which meets the requirements of medical education. As I have said, no college of liberal arts that is worthy the name will ask for a credit to which it is not entitled, but if it is entitled to credit, it will insist on that credit in some form or other, sooner or later.

#### A CAREFUL ADJUSTMENT ADVISABLE.

It is the business of medical schools through their accredited representatives to define specifically the subjects which rightfully belong to the medical college and the college of liberal arts; to define for the college of liberal arts what it must do in teaching histology, or in teaching bacteriology, or in teaching any other of these subjects; and what it must do to secure credit from medical schools. Is it not possible to define these subjects in that way? Is it not possible to determine what kind of equipment is necessary for these subjects? Is it not possible to determine what sort of teaching is to be required for these subjects? Is it not possible to determine how much training a man must have to teach these subjects? If it is possible, then let us have that definition; and if the medical men insist it must be a doctor of medicine who does it, let the medical men say so, and the colleges of arts will consider that point. I want to insist here that the independent colleges of arts will not yield its claim to consideration for medical work. They simply want to know what is necessary in order to meet the requirements of the medical college, and when they know these requirements they will proceed to meet them. Let us know what the requirements are. If not possible now to meet them we shall be satisfied to wait until we can meet them. We shall be satisfied to abide by your decision, if made on the basis of work done and not made arbitrarily. This subject involves two or three branches of our educational system. It involves the colleges of arts. It involves the medical school. It involves the state board of examiners. I would ask if it is not possible to secure some sort of co-operative treatment of these fundamental questions which are of interest to you as medical men, to me as a representative of the colleges of arts, and to the state boards? Is it not possible for this body to inaugurate some system whereby some co-operative adjustment may be made on the matter under discussion? As I understand it, you, as one branch of the medical fraternity, are working in one direction; I, as a college representative, am working in another direction; the state boards are working independently of either of us. Why is it not possible to adopt some co-operative arrangement for treating this question?

In conclusion, if the medical college wants to co-operate with the colleges of arts, I am sure the colleges will be glad to do their part. It is of the utmost importance to the medical school that it shall co-operate with the colleges of arts. There has not been any such co-operation except in the com-

posite institutions which we call universities. An arrangement of that sort ought to exist for the benefit of the independent colleges as well as for colleges of arts in the universities, which are able to meet, because of their location, the requirements. Is there a middle ground? I believe there is. That middle ground should be treated by the three bodies that have an interest in it, namely, the state board, the college men, and the medical men.

#### PREMEDICAL TRAINING.

One point that is a little afiel from the subject is this: The statement is frequently made that medical preparation in this country should be simply two years in the college. The statement is frequently made and heard that our first and second years in college are equivalent to that of the German gymnasium, which admits to university courses. That is hardly correct, because a student who has taken the course in the German gymnasium has a very much more intensive training than the American student who has finished his freshman and sophomore years in college. A man who has finished a course in the German gymnasium is more carefully trained. He is trained to a degree that is not approached, speaking generally, in the American college by a student who has finished his freshman and sophomore years. The training is more intensive, more prolonged in particular subjects. It is not as broad as our training, and from that point of view is inferior to it, but it is certainly more intensive. In discussing the medical question the comparison between the gymnasium student and the incoming junior in American colleges is hardly fair.

But my chief interest and hope to-day is that we shall be able at this meeting to inaugurate some co-operative method of treating the subject of co-operation between colleges of arts and medical schools, which to my mind is one of the most important now before us as educators, both from the medical point of view and from the college point of view. [Applause.]

PROF. F. F. WESBROOK, of Minnesota:—The point which I should like to emphasize is that the trend of modern medical education is to call for such specialization in teachers and laboratory facilities that all the smaller schools which are run for gain will disappear and all medical teaching will be done in universities. If this be so, it is only fair that the same methods obtain in the smaller college or non-medical schools, and it is unfortunate that strong universities like the University of Wisconsin, where the teaching in the pre-medical branches is all that could be wished by any one, should be the means of encouraging smaller and poorer schools, which can never hope to invest the large sums of money necessary for the proper teaching of the biologic branches, to persist in the endeavor to do so. I believe that Wisconsin and other universities which can properly undertake the teaching of

such subjects as anatomy, physiology, histology, embryology and bacteriology, etc., will either ultimately amalgamate with other universities, by recognizing the last two years of teaching in the clinical branches elsewhere and by themselves conferring a degree such as M.D. of Wisconsin, or that they will, on the other hand, be recognized as a medical school for the first two years and that the institutions to which their students go, will give the degrees unless they wish themselves to provide clinical teaching.

Minnesota only follows out the exact letter of the law under which her Board of Medical Examiners operate, and, so far as I understand it, the exact letter of recommendation No. 3, formulated by your Council. Since the time of Dr. Perry Millard the State Board of Medical Examiners has been a most constant help and stimulus to medical education in Minnesota. Its work in the tabulation of percentages of failures in the various subjects has been helpful to our institution, I know, and I think it is willing to provide all other official bodies with such information.

THE CHAIRMAN:—As in most topics to be discussed, there are two sides to this question. I should like to call on Dr. F. C. Waite, of Western Reserve University, to present one of them.

DR. WAITE:—In the discussion of the question of advanced standing to graduates of colleges of liberal arts it is essential that we keep in mind the fact that many of our medical schools are poor, poor in equipment, in facilities, in efficiency. There are in the country not more than twenty or twenty-five schools that can be called good. The rest are below par.

#### COURSES TAKEN IN COLLEGES OF ARTS.

The arguments of those gentlemen who say that the work done in the college of liberal arts is not well enough done to be accepted by the medical school, are based largely on the work done in these relatively few better medical schools, and disregard the low general average of medical education for the entire country which is brought about by the conditions in the poorer schools. We have many of these poor medical schools. As long as these schools give the present inadequate instruction and continue to turn loose on the public graduates in medicine with very meager training for the profession, and as long as the state boards permit these condition, just so long will it be, in comparison, incongruous for medical men to make the dogmatic assertion that work done in a place not under control of a medical school is of little or no value.

The acquirement of knowledge is not a thing of locality. The walls of a medical school do not assure good teaching of fundamental subjects, nor is efficient instruction in these subjects an impossible thing outside of a medical school. Migration of students from one university to another is a

custom common in Europe, and is coming to this country. In many ways it is an advantage, and there is no fundamental reason why migration from the college of liberal arts to the professional school may not be allowed.

#### COURSES IN SOME MEDICAL COLLEGES.

Does the medical school teach only applied science? I think not. There are each year many entering medical study who do not know the meaning of a chemical formula, who know nothing of physics, who have never looked through a microscope. Many medical schools accept such men. Since these students know no science whatever it follows that the medical school must first teach them the elements of science, pure science, before any applied science can be given. The first year in the poorer schools is largely given to the teaching of elementary science work. This elementary science not only can be given in the college of liberal arts, but to-day in many such colleges it is much better done than in many of the medical schools.

#### SOME COLLEGE WORK ADVISABLE.

It is to the interest of the medical profession to induce students to take some work in addition to the high school course before entering on their medical studies. College training is different in kind from high school training and better fits the man for his professional studies. Since some college work is desirable, or even essential to good medical training, the medical school should recognize the work in pure science that is done in the college of liberal arts as equivalent to the pure science in the medical school and thereby induce the student to take college work preliminary to his medical work.

#### QUALITY OF WORK DONE, THE ESSENTIAL POINT.

The colleges of liberal arts do not ask recognition of courses because they have a certain name, but invite inspection of the content of their courses. If the work is as good as that done in the average medical schools—not the few better ones—they ask that general recognition be given these courses, leaving the special evaluation of the course to the individual medical school to which the course is offered for credit. They ask recognition not alone of the knowledge that the college graduate has, but also of his ability and efficiency, which is greater than that of the average matriculant in the medical school, and may, therefore, enable him to do the same work in less time than his less mature and less well trained classmate. There seems to me no question that subject credit should be given. The debatable point is whether enough subject credit can be given to gain a year's time credit. This is a question of proper regulation and evaluation, which must be done by the state board. If the independent college or university teaches the subjects



of the first medical year, and if the state board finds that these are given as well as required by the medical curriculum—the curriculum, not of the best medical schools, nor the ideal curriculum that stands on paper, but of the average medical school in the state concerned—then the board should issue certificates entitling students to time credit.

#### MEDICAL SUBJECTS BY NON-MEDICAL TEACHERS.

Can a man who is not a graduate in medicine teach medical subjects? Apparently, yes, since in many of the medical schools men who are not graduates in medicine are to-day engaged in teaching the fundamental branches of the first two years.

We have a school in Ohio which ranks high in its sect, in which all the chemistry, including the medical chemistry, is taught by a man who received his chemical training in a technical school, and while he is a professor in a medical school, he is, primarily, occupied as chemist in an iron foundry. In several associated colleges of liberal arts come in and give instruction medical schools members of faculties in neighboring and unto medical classes. The giving of courses in the first two medical years by men who are students in the third and fourth years is not uncommon. In a neighboring state last year one medical school entrusted all its instruction in physiology to first year students to a man who was a member of the third year class. Similar conditions are found all over the country in the poorer medical schools. The total result is that much of the teaching of the medical subjects of the first two years is to-day done by men who are not graduates in medicine. We must assume that this teaching is satisfactorily done or it would not be permitted to continue by the faculties and the state boards who so carefully guard the efficiency of our medical teaching, and who, of course, are familiar with the grade of teaching, since in many cases the same individuals are members of the faculties and of the state board.

Since many medical schools do consent to have part of their teaching done by men in industrial scientific pursuits, by visiting men from colleges of liberal arts, and by undergraduate medical students, the argument that medical teaching cannot be done by other than medical graduates falls to the ground.

#### MEDICAL MEN VS. GOOD TEACHERS.

On the other hand it is not necessarily true that a man who is a graduate in medicine is a good teacher. In one half of the medical schools the teaching of first year branches is by men who are practitioners teaching as a side issue, and who scarcely know the meaning of scientific research. A man can not, in my opinion, be a first rate teacher in fundamental sciences unless he does some research.

The men teaching in our colleges of liberal arts are on the average good teachers, well trained, experienced, devoting

themselves primarily to their teaching and doing at least a little research work. This is certainly true in the better colleges and universities.

All of this seems to me to show that the training and efficiency of the teachers of scientific subjects in the colleges of liberal arts, although they are not graduates in medicine, is not below that of the men teaching similar subjects in the average medical school.

I hope that the time may come when the teaching in all the medical schools will be of so high grade that the college of liberal arts will be unable to equal it, but while, as now, many of the medical schools are receiving men from between the plough handles, and are giving not only elementary science work that belongs in the college of liberal arts, but much that belongs in the high school, and are teaching with meager facilities, with inadequate equipment and with inefficient staff, it is absurd to say that none of the subjects of the medical curriculum can be well enough taught outside of medical college walls to be recognized.

We are not discussing the ideal medical education, but the average sort that is given to the majority of our medical students, for the greater number of the men studying medicine to-day are in the poorer schools. In comparison with this average, the better college of liberal arts is doing work in many subjects of sufficient value to be recognized as equivalent, and as long as state boards allow the continuance of the inefficient sort of medical training that is prevalent to-day in some of the schools of nearly every state in the Union, so long these boards can not escape the duty of recognizing the work done in the college of liberal arts.

DR. WILLIAM H. WATHEN, of Kentucky:—My views have been so frequently repeated on this subject that it is hardly necessary for me to say anything to-day. I have always contended that we should give all the subject credit which the student is entitled to, as shown by proper examinations, but not a time credit, requiring students to attend four years in a medical college. I have applied this to a member of my own family. My reason for this is that up to the present time I have not been convinced that there were but few, if any, universities or colleges in this country that included in their curricula a course from a college of liberal arts, showing an equivalent to the first year of the medical course. On investigation by the New York board, through Professor Taylor, it was reported that no school two years ago was giving this work. A new phase has recently arisen in regard to this question, and that is to get a measure of the work done by the independent colleges. But this is rather in embryo, and is to be worked out. I see no way of working it out except through state boards. Unless a decided and positive position is taken in regard to this matter, every little so-called university in the

states all over this Union will be doing this work, and the question arises, who is to be the judge? The state boards are to be the judge, and this question I do not need to discuss any further.

While I am on my feet I wish to call attention to a little matter in relation to Kentucky which has been incorrectly reported by the secretary. Kentucky, as probably many of you are aware, has finally become entirely harmonious, in that all of its medical schools are working together under the same requirements. All of the schools are working in absolute harmony with the state board, and we have recently adopted the requirements adopted at Pittsburg by the Association of American Medical Colleges. The board and medical schools now confer with one another and have no trouble.

Another point: As to giving the percentage of failures before the examining boards for 1904, according to the table presented by the secretary in Kentucky, I wish to say that up to that time Kentucky had not required an examination of its graduates from our medical schools. Unfortunately, in passing our law two years ago, through the influence of some medical students, the board was compelled to allow the matriculates, then in the colleges of our state to register without examination; therefore, the percentage of failures of graduates in Kentucky schools is relatively much higher than it ought to be, as evidenced to-day, because nearly all the schools represented here, and also the members of examining and licensing boards agree in the statement that those students who applied for examination in the states in which they were graduated, generally passed.

As two-thirds of the graduates of 1904 from Kentucky schools were citizens of Kentucky, then if this statement be true, had they been examined for a certificate by our board, the percentage of failures from the Kentucky schools would not have exceeded 15 per cent., including all the states. It must be remembered that in estimating the percentage of failures, students who were registered without examination were not considered.

I think the Council on Medical Education is doing excellent work, and I believe the schools are in harmony with the sentiments expressed by our chairman when he took the chair this afternoon.

DR. A. RAVOGLI, of Cincinnati, Ohio, was asked to continue the discussion. He said: I have been opposed to the granting of advanced standing under the present condition of our colleges and of our medical examiners, for these reasons: I am connected with a medical college and have had experience with those who have obtained credit for advanced standing, and have had occasion to find them very deficient, trying to struggle along with other students. They do not succeed in a competitive examination; they do not obtain internships in

hospitals or receive the faculty prizes, which others so easily, comparatively speaking, obtain.

I see from the new rules that nothing is said about granting of advanced standing, and I believe that is very wise. Advanced standing in the beginning of the organization of our colleges was wise, because we wanted to induce students to come into our medical colleges, in this way saving one year which was of some benefit to them. But I do not think now that is of any use whatever, and I would abolish the idea of granting this advanced standing.

As to the question raised by the literary colleges, that histology, embryology, anatomy and physiology can be taught in literary colleges, there is no doubt that these branches can be taught there. Then, if those colleges take it on themselves to teach such branches, I would request them to establish a medical department and teach medicine in its entirety. There is no use to limit themselves to teaching branches of medicine only in the first year of medical instruction. We like to have students as thoroughly prepared as possible for the medical college. When a student has had one or two years of college work in a university, he is well prepared in general biology, in general chemistry and in general physics, and then when he attends a medical college he is able to understand anatomy, physiology, chemistry, and is able to understand much more of the applied phases of anatomy, chemistry, physiology and of physics. I see no reason why we should now allow this advanced standing for work done by students outside of the medical college. I am sorry that I differ from the ideas expressed by others on this subject, but I have by experience noticed that those students who had this privilege were not on the same level as others. Furthermore, I have found that this has been a source of trouble to medical colleges and to the board of examiners about establishing this advanced standing.

I am an advocate of the combined course, giving the A.B. and M.D. degrees in six or seven years. I think in six years the work could be well done, and I believe this will be a solution of the problem under discussion sooner or later.

DR. W. S. FULLERTON, of Minnesota:—I wish to speak on this question from the standpoint of the State Board of Minnesota, and so far as our board is concerned, the matter is very simple. There is no doubt in my mind that a student who has received a training in a college of liberal arts in certain basic sciences, when he attends a medical college, is better enabled to understand the special applied work in that science. But in the State of Minnesota we have a state law. The Board of Medical Examiners is not a law-making body. We can make rules as we please to carry out the provisions of the law, but we can not make a law. Our law reads explicitly that "at the time appointed, or at the next regular examination, the ap-

plicant shall prove that he has completed four entire sessions of twenty-six weeks each at a medical school recognized by the board, no two sessions having been held in one year, and if such sessions were held prior to the year 1899, three sessions shall suffice."

We have no objection whatever to a college of liberal arts receiving advanced standing from a medical college which requires a five years' or a six years' course in medicine, but for a medical college which nominally has a four years' course to receive and graduate a student, allowing him to enter in the second year is wrong, and that student is not eligible for an examination from our board because he has not completed the four years' course in medicine.

I do not know that there are other points that I wish to take up at this time. I simply wish to explain the position of the State of Minnesota.

DR. JOHN M. DODSON, of Chicago:—The custom of granting advanced standing to the holder of a Bachelor's degree grew up in this country about nineteen or twenty years ago. The requirements for admission to all medical schools at that time were low, and in the majority of schools then the student who had the price of tuition had no difficulty in gaining admission if he could read, write and cipher. It was felt to be desirable, however, by the better class of medical schools that students should secure some college training to better prepare them for medical study. Only one medical college at that time thought it feasible to establish a collegiate standard. Others desiring to encourage this preliminary preparation put a premium on college training by allowing the course to be somewhat shortened by granting advanced standing. I believe that that plan has been a salutary one; that it has done a great deal, especially in the West, to induce young men to take collegiate training before they entered the medical schools. I have personal knowledge of a number of students who took collegiate training because of this fact. Have we reached the time when it is desirable to abandon that custom? Have we reached the time when we ought to say, and that is really the import of this resolution, that the college graduate is no better than the high school graduate; that the high school graduate is just as able to take up comprehensively and understandingly the medical branches as is the college graduate? I do not believe it. I cannot believe it so long as the preliminary requirement of all but seven of our medical schools is only a high school diploma. Believing, as I do, that the time has come when every medical college ought not only to recommend, but insist upon a collegiate training for every person who enters a medical school, it seems to me that those schools that are not exacting this are doing a great wrong. They are doing a wrong to the profession; a wrong to the public, but most of all a wrong to the young men themselves. Under the conditions prevailing at the present time there are twice as many



physicians as there is room for in ratio to the population. When, in addition to this fact, we note the rapidity with which medical colleges are turning out graduates every year, there is little room to doubt that in the strenuous competition in the medical profession fifteen or twenty years hence, the young man who goes into medicine to-day with only a high school training will be so seriously handicapped that in the majority of cases he must fail of success. It should be remembered that conditions are vitally different to-day from those which obtained ten or fifteen years ago. Shall we encourage young men to take collegiate training by giving some recognition for it? This raises the question, What does a collegiate training stand for? Does it prepare one better for medical work? I believe it does, and for two reasons, first, it makes for power, and that is, after all, the great object of medical education. We must get away from the notion that medical education consists in stuffing a man with information; that his ability to practice medicine is measured by the number of facts he can reel off from a text-book.

#### TOOLS AND HOW TO USE THEM.

Dr. Vaughan this morning alluded to the desirability of men having certain knowledge because they need tools to use. I quite agree with him, but it is quite as important that he should know how to use these tools. The developing of the powers of the mind is the fundamental idea and purpose of education, to "draw them out," and to train men to observe accurately and thoroughly, and to reason logically. The student must be taught how to get information. If a college education does not do this it misses its chief function.

With all the shortcomings of the colleges of this country, they have produced great men in all lines, and there are still many colleges where men are properly prepared for the business of life, and they are the only institutions where young men can secure the right preparation for the study of medicine, except in rare cases.

#### VALUE OF A CLASSICAL EDUCATION.

I agree with Dr. Vaughan, again, that the classical branches are important, though not so much for training the powers of observation as for developing other faculties of the mind. A college training fits a man vastly better for the study of medicine, because it makes him a better and stronger man. He can work faster and to better advantage, and I say this from a careful observation of medical students for several years. I cannot understand the position of those who declare that high school boys are just as good as college boys, though of course there are exceptional cases. Secondly, a college training fits one for the study of medicine because colleges do give work in special branches which corresponds to the work of the medical course, and they do it well.

## STAND BY EXAMINING BOARDS.

By the recent action of some of the medical examining boards the medical colleges have been forced into a most unfortunate position—they have been compelled to assume an unfair and unjust attitude toward these institutions of general learning. For years we have been urging these institutions to introduce into their curricula and to improve the character of the instruction in chemistry, physics and certain biological branches that we might give credit for this work, and they have responded to this request. Now we are forced to say to them, “your work is of no value and can count for nothing. The high school graduate is as capable and as well prepared to pursue the work of the medical course as the young man who has supplemented his high school course with four years of collegiate training such as you provide.” Is this fair? Is it logical? Is it in the best interests of the medical profession?

## BRANCHES BETTER TAUGHT IN THE LITERARY COLLEGES.

I have visited recently some twenty-six literary and scientific schools in the West, and in the last few years have visited about one hundred of the same grades of colleges. I have taken particular pains to talk with the men who teach these branches and to inspect their equipment. We have been able, furthermore, to judge of the work of these schools through their students who have come to us. Of course there is a difference in colleges. There are poor colleges, just as there are poor medical schools. But I venture to assert that in nine-tenths of the literary and scientific colleges of the country where physics, chemistry, histology, embryology, bacteriology, and similar branches are offered at all, they are vastly better taught than in nine-tenths of the medical schools in this country. They are taught by better instructors, because these men do nothing else but teach and investigate along their respective lines.

## WHO SHALL TEACH THE FUNDAMENTAL MEDICAL BRANCHES?

The time has gone by when the fundamental medical branches can be taught by a practitioner of medicine as an incidental diversion. While I believe it is desirable that a teacher should have some medical training, after all, as between the man who is an anatomist, pure and simple, and the doctor who is teaching anatomy as an incident to a busy practice, is there any question as to which is the more fit? These colleges are teaching these branches well, and the question is how to fit their work into that of the medical school. We all realize that a man must complete his collegiate and medical education reasonably early. There are three ways of doing this: First, the medical school may accord recognition to the holder of a Bachelor's degree for his work. It has been said we may give him credit for his work, but not for time. That is an empty nothing; it is offering a man bread and giving him a stone. The second

method is what is called the "Wabash plan." I know many of the colleges do not like this plan, for example the college over which President Main presides, nor do I wonder at this. But, on the other hand, there are a large number of smaller colleges in which little scientific work is done, where it affords the best solution of the problem for the young man, provided he goes to a medical school in which the fundamental medical branches are taught as branches of general learning. Third, literary colleges may establish medical departments of their own. This plan has been tried in several instances and in some cases it has been abandoned. It is far from economical, for any college to keep up expensive departments of anatomy, physiology and the like, and it can not be done advantageously by any college that has in such courses only six or seven students a year.

#### THE COMBINED COURSE.

As to the combined six-year course for the degrees of A.B. or B.S. and M.D., I would like to say a word. It seems to me that an excellent answer to the objections which have been made to it is contained in a bit of history. A few years ago a certain medical college became affiliated with a university. That medical college had announced its intention to require two years of college work for admission. It found this condition of affairs at the university: A four-years' course for the Bachelor's degree, the first two years of which were fairly closely prescribed, and in this period a student could get physics, chemistry, biology, and a reading knowledge of German and French. The last two years were elective, with the exception of three majors or months of work in philosophy, history or economics. In this university bacteriology was taught. It had not been introduced as a medical branch, but as a branch of general learning. It had a department of anatomy, well equipped, teaching both gross and microscopic anatomy. It had a well-established department of physiology under the charge of one of the great physiologists of the world. It taught physiological chemistry. These were all offered as branches of general learning which a young man could elect in his course for a Bachelor's degree. Said the college faculty to the university, "We understand that after a young man has completed his sophomore year, he can take such and such courses in anatomy, physiology, etc., and procure a Bachelor's degree, adding three majors extra in philosophy and history. When a young man has done that he will have completed the first two years of the medical curriculum, and he will have had better instruction than we can give, and we believe as good as can be procured in these branches anywhere in this country or in the world. We shall give him the medical degree at the end of two years subsequent to that period. Should that in any way interfere with his getting the Bachelor's degree at the end of his course in the university as above outlined?" There was obviously but one logical answer

to this question. There would be decided objection to giving credit for these branches if taught in the medical schools to-day in the piecemeal fashion of former days, but when they are taught in the way they should be taught, as branches of general science, they ought to count on the Bachelor's degree just as much as should any other science. May I say in this connection, with reference to the Minnesota law, that while I believe it to be a distinct step backward, the great objection which medical schools have had to that law was not to the original statute, but what was believed to be the unreasonable interpretation put on it last year by the board of medical examiners? It is interesting to note that it took six years to discover that that interpretation ought to be put on it. The law was passed in 1898. It says in words to this effect, "The applicant must present evidence of having attended four years in a medical school." It does not apply the rule to the college, and the state board had been applying the interpretation to the individual applicant until it was concluded, a year ago last autumn, that thereafter it should apply to the college, and that any college granting such advanced standing to any student should have all of its diplomas refused recognition. This position taken by the board was unwarrantable and illogical. One young man who settled in northwestern Minnesota, a graduate of Rush Medical College, was able to show the board that quite irrespective of the credit given for his work in the literary college from which he graduated, he had spent more months in Rush Medical College than the board required, although he finished the medical curriculum in less than four calendar years. He was refused by the board admission to their examination. Since then, I understand, he has secured a license to practice. A number of similar instances have come to my knowledge.

THE CHAIRMAN:—While this discussion is interesting and profitable, our time is limited. I would like to suggest, in keeping with the ideas advanced by Professor Main, that inasmuch as there are three parties interested in this discussion—the school of liberal arts, the medical college and the state board—that we ask some of these gentlemen who represent these different bodies to form a committee and give us a report on this question at the next conference. Therefore if Professor Main, Dr. Fullerton, Dr. Lambert and Dr. Dodson are willing I should like to take the liberty of appointing them as that committee, with instructions to make a report at the next conference.

PROF. B. D. MYERS, of the Indiana University School of Medicine:—I wish, gentlemen, to emphasize the fact that when Dean Vaughn addressed us this morning he was not theorizing. His plea for a thorough grounding in the subjects he mentioned, so desirable for a premedical training, does not represent an ideal to be attained at some future day, but a

carefully thought out course of study already in operation in an ever increasing number of schools in the United States.

Let me call your attention to this outline in which these subjects are arranged as a course of study covering a period of two years in a good college or university.

Entrance on this course presupposes the completion of a four-year high school course, in which English, German (two years), Latin (two years) and mathematics (algebra, plane and solid geometry) are required, and history and physics recommended along with other electives.

FIRST OR FRESHMAN COLLEGIATE YEAR (PREMEDICAL).  
FALL TERM.

English composition .....	2 hours.
German .....	5 hours.
General chemistry .....	5 hours.
Elective .....	3 hours.

WINTER TERM.

English composition .....	2 hours.
German .....	5 hours.
Qualitative analysis .....	5 hours.
Trigonometry .....	5 hours.

SPRING TERM.

English composition .....	2 hours.
German .....	5 hours.
Qualitative analysis .....	5 hours.
Hygiene .....	3 hours.

SECOND OR SOPHOMORE COLLEGIATE YEAR (PREMEDICAL).

FALL TERM.

Zoölogy (1) .....	5 hours.
French .....	5 hours.
Physics .....	3 hours.
Philosophy (16) .....	3 hours.

WINTER TERM.

Zoölogy (1) ..	5 hours.
French .....	5 hours.
Physics .....	5 hours.

SPRING TERM.

Botany .....	5 hours.
Organic chemistry .....	5 hours.
Physics .....	5 hours.

In the course of study, gentlemen, we have the essentials of a premedical course. Please note that English, a good use of which is so important to the student of medicine and future physician, is carried throughout the first year as composition work.

With the two years' German required for entrance, the one-year German in the university gives the student a fair reading knowledge of the language. I do not say that he will be able to read it fluently, but he will be able to take up a German periodical or reference book and get the most out of it. With two terms French, a recitation every day for two-thirds of a year, a student acquires a fair reading knowledge of French.

Note the time given to chemistry. Here are 150 lectures and 175 hours of laboratory work, a total of 325 hours in general chemistry, qualitative analysis and organic chemistry.



This enables a man to take up later a good course in physiologic chemistry, work which belongs properly to a medical course.

The term in trigonometry represents the training so desirable for the study of physics.

In physics you will note there are lectures three times per week throughout the year, accompanied by laboratory work in heat, light and sound, in electricity and magnetism; 108 lectures with 144 hours' laboratory work. Physiology is possible to a student with this training.

Two terms of zoölogy with one term in botany (or a year in biology, if you please) gives a training which strengthens the student for nearly every subject of his first two years of medicine.

Here, then, gentlemen, we have a preparation for the study of medicine, a preparation that is a double help when the study of medicine proper is taken up, for not only is the student better prepared to do medical work, but the work of the first two years of medicine is made lighter by relieving it of the preliminary work in chemistry and the foundation in physics.

I do not agree with Professor Main that this does not represent a good equivalent of the preparation German students have for medicine. It is true their preparation in languages is much better than ours. I have known students of medicine who came to the work with nine years of Latin and seven years of Greek. Of course, they could read medical texts. The words of Greek and Latin derivation, so difficult for most medical students, had a meaning transparent for them. But the preparation of German students in sciences is away below that represented in such a course as outlined above.

I have heard this subject discussed now for the third time—last fall at a meeting of the American Academy of Medicine, a short time ago at Pittsburg at a meeting of the Association of American Medical Colleges, and again to-day—and I feel that to-day's discussion has been by far the most free from prejudices. In discussions at the meeting of the American Academy of Medicine the value of the A.B. degree was greatly overemphasized. It was the degree and not the work represented by the degree that was the *sine qua non*. The fact that a course of study as outlined above represents a preparation for the study of medicine as good or better than that represented by the ordinary A.B., in which a smattering of many things and a knowledge of no one thing has been acquired, was entirely overlooked. Discussions at the meetings of the Association of American Medical Colleges are too frequently colored by the interests of the school represented. Here work has been the requirement recommended as a preparation for medicine, and interests of schools have been subordinated to the advancement of medical education at large.

In closing I wish to say I feel that, for the sake of medical education in America and for the sake of the standing of American medical schools in foreign countries, the Council on Medical Education of the American Medical Association should place itself on record as favoring an entrance requirement such as outlined above, an ideal as high as that of Germany or France.

#### RELATION OF THE STATE MEDICAL SOCIETY TO MEDICAL EDUCATION.

THE CHAIRMAN:—In the work of the Council during the year it has appeared important to enlist the interest and services of state medical societies in the work of medical education, and with that in view we have appointed committees on medical education in the different states, and we have asked the different state organizations to pass amendments to their by-laws creating essentially a state committee on medical education, as did the American Medical Association in creating its Council. We feel, as I stated at the beginning of this conference, that the two important bodies which must accomplish results here are the state examining boards and the state medical societies. The state medical society must see to it that medical laws are passed; that the right sort of men are appointed on licensing and medical examining boards. We should like to discuss that phase of the subject briefly, and I will ask Dr. Witherspoon of Tennessee to open the discussion.

DR. J. A. WITHERSPOON, of Tennessee:—Mr. Chairman and Gentlemen: In opening this discussion about the application of medical bodies to the necessary aid of the work of the Council, it has been a source of a great deal of trouble, yet a source of a great deal of interest to those of us who belong to the Council of the American Medical Association, for the reason that when the American Medical Association was re-organized and appointed its Council, it did so with the one idea in view of bringing about a better feeling and co-operation among the states, so that we could improve not only the medical teaching of the country, but that we could improve the personnel of the medical profession in America. That was the object. The great trouble came when we considered what was to be done; that we had no power whatever to enforce any standards. Therefore, the Council undertook to bring together the forces wherein power did exist, namely, the examining boards and the state medical societies, through their officials and committees to enforce whatever might be agreed on. The American Medical Association, if it never does anything else, will have conferred on American medicine a lasting obligation to its organization if it can elevate the standard of the profession as well as the teaching corps as they exist to-day.

In this discussion I have been struck very much in listening to the remarks of other gentlemen as to how much of it has been local. Every man has discussed what they do in his

state. Now, gentlemen, the Council on Medical Education for the American Medical Association recognizes no state. We are Americans. We are here to formulate a plan, and if our brothers in Minnesota are compelled to enforce plans and recommend changes which can help their weaker brothers somewhere else, it is their business to do so. Never mind building a wall around ourselves. It matters not what may be your feeling now, I want to say to you, you are your brother's keeper, and it is your duty to help every section of this country to rise up and elevate and meet the requirements of the day, and that is what this organized body should do.

I have no apology to offer for living in Tennessee. We have troubles enough, but we fight our battles alone. I am glad to say to you, in confirmation of the remarks of Professor Main, after having been a teacher for twenty years in a university that requires identically the same standard of entrance as that required by Harvard and by the University of Chicago in their literary and medical departments, that so far as the high school graduate and the college graduate are concerned, there is no comparison between the two, if you take them as a whole. None in the world. There is no question but that there are men in this world, gentlemen, who never looked inside of a medical book or went into a medical college who would make great doctors if they received instruction; but you can not tell me that a man with a thorough classical education is no better for having had it, and is no easier taught for having it, and I think he should have credit for it.

#### COMMITTEES ON MEDICAL EDUCATION.

If the state societies all over the United States will appoint committees of their leading men and go to the powers that be—the politicians—the men who make the laws, and demand of them the aid and assistance in the passage of laws which will aid this Council, which will aid boards of medical examiners, then we will have solved the problem. I want to say we believe that it is perfectly feasible for a state society to have an organized committee, and the great mistake would be to appoint such a committee yearly. Such a committee should be appointed in every state medical society, which shall last just as this Council lasts, and whose duty is not to work this year alone, but for years, in order to keep continuously before the people the necessity for elevating the standard of medical education. If this is done, you will give these men some power. But if it is done like it has been in the past, namely, appoint three members of a committee this year, and another lot next year, you will never accomplish anything in the world—never. Let us stick to our state boards and our state societies and request them to appoint committees on education who shall succeed each other yearly, and in this way let them start in this work. It is not the work of a year, it is the work of a lifetime. If we can do this, when we have passed off the field of action if we have in any way aided our people to

better medical thought and medical knowledge, and have given the people a better class of men to take care of them in their sufferings and afflictions, we will have gained what every true doctor is looking for, and that is, Well done, good and faithful servant. [Applause.]

THE CHAIRMAN:—We have with us to-day, if you will excuse me for putting it in that light, one of the old war horses in state medical legislation, who will be able to speak to us from the standpoint of practical experience in this work. I should like to ask Dr. Pettit of Illinois to discuss this subject.

DR. J. W. PETTIT, of Illinois:—Mr. Chairman and Gentlemen: Why Dr. Bevan should have invited me to be present at this meeting I cannot understand, for the reason that I am not a medical teacher nor am I a member of a board of medical examiners. I presume his object in inviting me was to get some information with regard to the practical side of securing medical legislation. I can give you no information upon this point except to say that in my experience of several years as chairman of the committee on medical legislation for the Illinois State Medical Society, I learned how not to do it.

One of the greatest obstacles in securing needed legislation is the unorganized condition of the medical profession. We never can succeed until we can make our influence felt in the usual way. This is through a compact and thorough organization which asks for something and is in a position to enforce its demands.

Medical men will agree on the general proposition that we should have laws to regulate the practice of medicine, but are divided in their opinions as to what should constitute a good law. In our attempts in this state we were compelled to harmonize three recognized schools of medicine, each of whom was jealous and suspicious of the other. We also had a legislature that was indifferent, and a people who were still more indifferent. We started out on the supposition that at least the members of the regular medical profession would sustain their committee. If not, we would certainly be supported by the state society whom we represented. After four or five years of effort the committee found when it most needed the support of the medical profession we were left standing absolutely alone. I do not mention this fact in any critical spirit, but to show the necessity for organization.

#### LEGAL DEFINITION OF MEDICAL PRACTICE.

We also learned that the storm center in medical legislation is the attempt to make a legal definition of what constitutes the practice of medicine. Any physician here could frame a definition of the practice of medicine which would probably satisfy every other one present, but it is impossible to make a legal definition without including too much or too little. As medical men we are apt constantly to make the mistake of attempting to secure medical legislation along

ethical rather than constitutional lines. We fail to recognize the fact that if we succeed in securing medical laws according to the ideas that usually obtain amongst the better class of medical men it would be equivalent to establishing a state medicine, which is and ought to be as obnoxious to the body politic as the establishment of a state religion. I am satisfied that we ought to confine our attempts to raising the standard of the legitimate practitioner, instead of directing our efforts to the suppression of quacks and faddists. This I believe can be done by general rather than specific legal provision. The fact that some regulation of the practice of medicine is necessary and desirable is recognized by the public generally. It is only when we attempt the enactment of a law which excludes from practice those who are not engaged in what we regard as rational methods that we encounter opposition.

While it would be a new departure, I believe that in future attempts we should seek the enactment of laws which shall regulate without attempting to define what shall constitute the practice of medicine. I also believe that the provisions of such a law should be as general as it is possible to make them, vesting the power in examining boards to make rules so far as this can be done, and not make them a legislative body. This would leave the whole question of what constitutes the practice of medicine in the hands of the higher courts, where it properly belongs, and whose jurisdiction we can not escape even though we may succeed in incorporating such a definition as we desire.

#### HIGHER COURTS MUST DECIDE.

Experience teaches that we may safely trust the interests of our profession in the hands of the higher courts and the more liberty we give them the better it will be for legitimate medicine. A study of the decisions of the higher courts in all the states shows that with a very few exceptions their decisions have been liberal and in the interest of rational medicine. I do not pretend to say that the plan proposed will result in the exclusion of quacks and faddists. I do not believe it will, but I am decidedly of the opinion that we will succeed much better than along the line which we have so frequently attempted and quite as often failed. Such a course relieves us of the charge which is made and generally believed that our attempts at medical legislation are not in the interests of the public, but to exclude the opposition of quacks and faddists. In other words, that our motives are mercenary and not philanthropic.

It seems far better for us to confine our efforts to raising the standard of rational medicine and thus by indirection eliminate the illegitimate practitioners. I sincerely believe that if we will direct our efforts toward maintaining a higher standard in our own ranks that the public may safely be trusted to deal with quackery in its own way. We will at least no longer be placed as hitherto in the humiliating position of regarding them as opponents.



THE CHAIRMAN:—We have a gentleman with us to-day who has taken a very active part in the work of reorganization of the American Medical Association. I refer to Dr. George H. Simmons, and I would like to have him say a few words on the relation of reorganization to medical education.

DR. SIMMONS:—There is not much that I can say to you, Mr. Chairman, at this time. Organization ought to have considerable influence on education, because the organization of the profession is fundamental in raising the standard of the profession, and if we can raise the standard of the profession, and particularly those in practice, we will certainly be able to bring influence to bear on legislation, on licensing boards and in other ways raise the standard of medical education. That is all I care to say at this time.

### MEDICAL CURRICULUM.

THE CHAIRMAN:—We now come to the discussion of a subject which the Council has felt had to be handled with gloves, one that needs a great deal of study and time to work out. I refer to the subject of "What Constitutes a Proper Medical Curriculum?" I should like to hear from Dr. Councilman, of Harvard Medical School, Boston.

DR. W. T. COUNCILMAN:—I have heard so much in this discussion that is interesting and the points considered have been so well handled that I hesitate to enter into it. The formation of a medical curriculum which would be adapted to all local conditions of the schools would, it seems to me, be a matter of great difficulty, and it is doubtful if a fixed curriculum would be desirable. All subjects can not be taught equally well in all the schools, and it will in general be found to give the best results if more time be spent on those subjects which can be well taught than on those which must be poorly taught. The excellence of teaching depends on both the facilities for teaching and the teacher. A great and inspiring teacher can do much in overcoming poor facilities. Dr. Dodson has well said that medical education must be for power; the student must be perfected in the use of the tools of his profession; he must know when to use them and the limitations to their use.

### PRELIMINARY EDUCATION.

The character of the education which precedes the study of medicine is of great importance. This is being impressed on me more and more. For the past ten years I have made a careful analysis of the students in my class with reference to the character of their collegiate education. I have not found a great deal of difference in the men coming from the different leading colleges. There still remains a number of institutions in which much that is taught consists in textbook lore, and no attempt is made to train the senses and the reasoning powers. Such institutions give poor students. The matter studied is

important. The best students in my branch of medicine are those whose collegiate studies have been of such a character that the senses have been trained, and power of making the proper deductions from observations cultivated. We hear much as to how much chemistry or physics or biology shall be included in the preliminary studies. I greatly prefer a man who has gone deeply into some one of these under the direction of a great teacher to him who has more superficially studied them all. After all, the most necessary and the hardest thing for the student to acquire is the scientific method. Provided he has this, the manipulations necessary in any of the different sciences can be easily acquired. I have found that the teacher makes a great difference. Knowing what institution a man comes from, I am often able to say, "You were one of Professor —— students."

#### A SCIENTIFIC EDUCATION.

We must never lose sight of the fact that medical education is a scientific education. The senses must be trained, the proper deductions made from sense impressions, and the action must be the result of the combination. Such men take hold well, they acquire methods easily, they are capable both of doing more work and doing it more thoroughly. I do not recognize that there is any difference between the so-called practical medicine (i. e., internal medicine and surgery) and the so-called scientific medicine (i. e., physiology, anatomy and pathology). The scientific method is just as important in internal medicine and surgery as in anatomy and physiology.

I do not agree with Dr. Vaughan as to the importance of Latin and Greek. Latin is certainly of more importance than Greek, its chief importance being that a small knowledge of it renders it more easy to acquire the modern languages. Dr. Vaughan seems to think that a thorough training in Latin and Greek is useful in showing the meaning of medical terms, but these very terms may give great pain to the real scholar. French and German are important, particularly the latter. They are of no importance unless a man can really use them, and it is very rare that a man comes to us from college with any power to use a language other than his own. The colleges do not seem to realize that these languages are for use as tools and not for ornament. It seems to me that it ought to be possible for a man in the course of a few months to acquire the power of reading French and German at sight, and he rarely acquires this after several years' study in college.

#### THE CONCENTRATION METHOD.

We have lately introduced two new methods into the course at the Harvard Medical School, one of which has worked so well that there is no disposition to change it, and the other promises to work equally well. The first is the concentration method. The student learns but one thing at a time. When

he enters the school he studies anatomy, histology and embryology, the form of things and their development. Next he studies physiology and physiologic chemistry, or the functions of the forms he has already studied. He next studies pathology, or the disorders of form and function, which is followed by the study of methods of medicine and surgery, introductory to the clinical studies of the third year. The objection that the student would forget his anatomy while studying physiology, etc., now seems to us only amusing. Under this method teacher and student come more closely together, the subject is always fresh, there is no loss of continuity, and progress is infinitely greater. Neither student nor teacher would go back to the old method. We should remember that we pursue the concentration method in our own work as much as possible. We take up one piece of research at a time and one study at a time.

#### WORK ELECTIVE IN THE FOURTH YEAR.

The second innovation is the elective fourth year. This promises equally well, but has not been in operation long enough for us to certainly know its advantages or disadvantages. The endeavor is made to give the student the most essential things in the first three years of the medical course. In the fourth he is given a large degree of choice in his studies. The student is advised as to what studies will be most valuable in the career he has chosen. He must put in the 1,000 hours and show what he has acquired. He may give the entire time to internal medicine or to surgery or to anatomy or to physiology or pathology, should he strive for an academic career in these subjects.

With regard to the advantages of demanding a collegiate degree before entering on the study of medicine I feel very uncertain. There is no doubt that the general average of my class has been better since we have had this requirement. The great objection is that men are too old when they finish their medical course. There is no reason why men should not be perfectly qualified to enter on the study of medicine at the age of nineteen, but it has not seemed possible to overcome that radical defect in our educational methods, in consequence of which the American youth takes two years longer than the German or French to reach the same standard.

DR. S. W. LAMBERT, of Columbia University, was asked to continue the discussion. He said: I think the point that Dr. Councilman has just brought out in regard to the concentration method of work in medical schools forms one of the most interesting experiments that has ever been tried in formulating the work of a curriculum in a medical school. Personally, in coming in contact with students in New York I do not feel that we are ready for as much leeway as would seem to be granted to them by the system now in vogue at Harvard. But whether concentration is used as a method, or

whether the old system of spreading the work of all subjects throughout the years, is adopted, I believe the work in all medical schools can be improved along the lines which are laid down in the ideal scheme proposed by this Council. I refer to the last point made: that the student should spend a certain part of his time as a finish to his education as an undergraduate as an interne in some hospital. Even in New York, where the hospitals are more numerous, perhaps, than anywhere else, there are not enough internships to give every medical student an opportunity to fulfill this condition. I feel, therefore, that the development of the ideal curriculum requires a very radical change in the organization of hospital services.

#### WORK IN HOSPITALS.

It has been proposed to allow the fourth-year medical students to go into the wards and become medical clerks, as they call them in England, or medical dressers. But in most cases where this has been proposed the clerks or dressers are made an extra to the hospital service. An ideal curriculum can be accomplished only by making the fourth-year medical students, the undergraduate students, a definite and integral part of the hospital organization. If that were done the regular staff, as it is at present constituted, should have added to it a number of undergraduate men. In New York, at all events, it is impossible to do this at present, because the medical schools have no authority over the hospitals, with the one exception that each of the three large medical schools controls one-fourth of Bellevue Hospital. But I believe that the working out of a curriculum, not only in a large city, but in a small city, can be accomplished by influencing the lay managers of hospitals, proving to them that it is their duty to improve medical education by the admission of such undergraduate dressers to their hospital service. A hospital organization on this plan would then be built up as a pyramid, with the attending physician or surgeon at the top, with a lower grade of assistants, consisting of two or three to each attending physician, with a house staff of graduates under them, consisting of twice as many men, and then below them, again, the undergraduates. The present organization in most hospitals is deficient, not only in regard to undergraduates, but in the fact that there are not enough assistants supplied between the regular house staff and the attending physicians. I believe there should be concerted action on the part of medical teachers throughout the United States to bring about this increase in the curriculum and to make more nearly possible the ideal curriculum as outlined in the report adopted by this Council. I believe it is possible that students should be given internships on some such modified basis and that every student can receive such an internship without extending the number of years of the curriculum.

## PRELIMINARY EDUCATION.

The question of preliminary education in laboratory work has been thoroughly discussed this afternoon, so that it is somewhat superfluous for me to speak of that. It is, however, included in the outline of any ideal curriculum, and I trust I may be pardoned if I attempt to answer President Main's questions concerning the admission of graduates of colleges of liberal arts to advanced standing in medical colleges.

## TEACHERS NOT NECESSARILY PHYSICIANS.

There is no doubt that a successful teacher of physics or of physiology or of chemistry to medical students does not have to be a doctor of medicine. At Columbia the governing faculty consists at present of thirteen men (there are about 100 instructors and professors) and one of this governing body of thirteen, the professor of physiological chemistry, is not a medical graduate. There are also three professors of physiology and only one of them holds the degree of M.D. Nevertheless Columbia declines to admit such graduates in liberal arts to advanced standing, and for the following reason: Columbia does not believe that the number of medical subjects with a purely scientific fundamental basis is sufficiently great to make up a whole year of the curriculum. No matter how well taught in the college of liberal arts there will remain much to be done by the medical school in bacteriology, in physiology, and to a less extent in chemistry. It is, however, on the subject of anatomy that Columbia balks. Columbia's anatomy department has been criticised as being too scientific, and this may or may not be true, but this work forms a large part of the first and second year curriculum. And the training in anatomy is, in my opinion, very greatly responsible for the success of the graduates of Columbia in truly scientific work in any of their subsequent specialties. Columbia knows of no course in biology, comparative anatomy or kindred subject which can be considered as more than a preparation to its own course in anatomy. Any student entering Columbia in the second year without anatomy would be hampered throughout the whole course. Columbia solves this question with its own students by adopting the combined university plan as outlined this afternoon, and it is possible for a good student in Columbia to take his bachelor of arts or of science and his doctor of medicine degrees in six years. But he does this because the college accepts the work of the medical school and not, vice versa, that the medical school accepts the work of the department of liberal arts.

## ADVANCED STANDING FOR A.B. OR B.S.

I agree with President Main that there is "fundamental pure science" in the medical school subjects spoken of, but I object to his demand that the college of liberal arts be given all and yield nothing. It is quite as much the duty and privilege of the different colleges of liberal arts to select what



medical schools shall be considered as giving enough pure science in their first year to warrant the college in accepting that work as fulfilling the final requirements toward the A.B. degree for their best equipped third-year students as it is for the medical schools to adopt the contrary principle and admit graduates of liberal arts to advanced standing. Columbia stands ready to enter into such an arrangement with other institutions, not only in medicine, but in law, and has already done so in one case at least. So much for the academic side of the question, but there is another side, the legal side. At present the law in certain states forbids such credit being given upon penalty of having all graduates of offending schools barred from the state examinations. I speak for Columbia again and I would say that Columbia will never consent to any curtailment of the privileges of the holders of its degree of doctor of medicine. Dr. Witherspoon might criticise all this as a local point of view and such it surely is. The troubles in the whole question of medical education are that it has always been a local question, and I conceive it to be the greatest possible boon to education that your Council has been created and that you are doing such epoch making work to overcome this fault and to make medical education in this country a truly national question.

#### MEDICAL CURRICULUM.

DR. F. C. WAITE, of Ohio:—In regard to the four-thousand hour curriculum which has been adopted by the Association of American Medical Colleges, there is one suggestion I want to make, which concerns its elasticity. There are several subjects in this curriculum that are similar. I have in mind as an example the subjects of toxicology, materia medica and pharmacology. It seems to me that in constructing a curriculum with a definite number of hours to be devoted to certain subjects we may better group similar subjects and assign a definite number of hours to each group. It is difficult to find any two instructors who will limit the subject of materia medica by the same boundaries. One may say that materia medica stops at a certain point and that from there on the subject is pharmacology. Another may think the division should lie at a different place. A system of grouping similar subjects in the curriculum would bring about more uniformity in the content of courses and groups of courses, and would make it more feasible for schools to comply with the letter of the regulation as well as with the spirit of it. They would, therefore, be more likely to live up to the adopted common curriculum.

#### HOSPITAL FACILITIES.

DR. A. RAVGLI, of Ohio:—I want to say a word or two in reference to hospital facilities. In Cincinnati we have an arrangement whereby the City Hospital is open to the students of all colleges of the city. Furthermore, every one of the

staff officers takes a group or class of students and gives them bedside instruction. In this way a large number of students receive bedside instruction. It is difficult for many of these students to receive internships, because only twelve internes are allowed in the general hospital. But we have small hospitals in which internships are secured by competitive examinations. We have the Good Samaritan Hospital, the St. Mary's Hospital, and several other hospitals. Nearly all of the best students succeed in obtaining internships in these institutions by competitive examinations. We advise others, who are not successful in getting internships, to take post-graduate courses. I do not think two years of clinics in a college are sufficient to give anyone a large enough clinical experience to begin the practice of medicine unless he has had one year or eighteen months hospital experience.

#### MEDICAL CURRICULUM.

DR. JOHN M. DODSON:—The subject under discussion is one of great importance, as the chairman has well said, and I should like to take this opportunity to say to the members of state medical examining boards that it is eminently desirable that they should proceed with great care and deliberation in prescribing a so-called ideal curriculum. Personally, I do not believe there is any such thing. Putting aside the proposition of training men for special lines of practice, which we at Rush Medical College have not thought to be wise, it must be remembered that we cannot drive a number of men through the same channels and get a uniform result. We want to secure men of power, with, of course, a certain amount and kind of information. You cannot get that by driving men who are differently constituted through the same channels. We need to take a lesson in this regard, as in several others, from the institutions of general learning, in which pedagogy has been studied more carefully than medical men have studied it. It has come to be the almost universal rule in the stronger colleges and universities to offer elective branches and to give much latitude of election to the student. Why? Because it is realized that, as men are differently constituted, different methods must be pursued with some men than with others, in order to get the best results. A rigid, uniform curriculum makes such an arrangement impossible, and some of those which have been prescribed are wholly contrary to modern pedagogical ideas. Take, for example, that of the Michigan State Board. The board has lost sight of certain important things. The total attendance required by Michigan comprises four years of seven months each. If we estimate (and that is a minimum estimation), that the average students must study two hours a day outside of the classroom to prepare for a one-hour lecture or recitation, and needs one hour of preparation for every two-hour laboratory period, then in order to accomplish the work of the curriculum outlined by the Michigan board he would have to work twelve hours a day for six days in the week, through the whole four years. Surely no educator

would regard that as a reasonable exaction. In constructing a curriculum of this sort account must be taken of the time the student must spend outside of the college walls, because if he is to develop capacity for independent thought and work he must spend a good deal of time in reading and reflection outside of the class-room, and the time which he so utilizes is of as much if not of more importance than that which he spends on the benches or in the laboratory.

Is it necessary, as a basis for reciprocity, to specify with such minute detail twenty-eight different branches, saying that a man shall spend so many hours in the laboratory, so many hours in recitation work, etc.? The fact is that some men ought to spend most of their time in the laboratory; others in recitation work, etc. Very much depends on the mental caliber and peculiarities of the individual.

The curriculum laid down by the Iowa board is more logical because it does not specify in such minute detail how the student shall pursue his work.

A few years ago the conclusion was reached in this country that the licensing body and the teaching body should be separate. In almost all states the matter of licensure is now distinct from that of securing a diploma. At present we are in danger of too much interference of the licensing board with the teaching bodies. It is the business of medical educators to study and experiment with methods, and we are feeling our way as to the best methods. At Rush Medical College we are trying a free elective system. We are making changes constantly. It is an experiment, but I believe it is destined to be one of great value. Its effect on both students and teachers has been very pronounced. I believe that, for the most part our students are capable of determining for themselves the best courses to take. We are not dealing with kindergarten children; in medical students we are dealing with men, and when we have men of collegiate training they are men of power. They know what they want. Our experience has been that these men do not seek easy courses, but effective courses.

Let me ask that if any further curricula are prescribed these things be borne in mind. Give the medical schools of the better class the same freedom of action, same opportunity for experiment with new and possibly very advantageous pedagogical methods. Only under such conditions can we hope for progress toward a better and more effective scheme of medical education.

THE CHAIRMAN:—I am sure these discussions have been very profitable to us all. It is one of many steps that must be taken in the march forward, and we shall have a very much wider audience for the work and the efforts which have resulted from this day's meeting than the few men who have assembled in this room and have taken an active part in the discussion.

I want to thank you all in the name of the American Medical Association for your interest and your presence. With these few remarks the conference will now stand adjourned.

THIRD ANNUAL CONFERENCE *of the*  
**COUNCIL ON MEDICAL EDUCATION**  
*of the* AMERICAN MEDICAL ASSOCIATION,  
*held in* CHICAGO, APRIL 29, 1907







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## COUNCIL ON MEDICAL EDUCATION

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## SPECIAL COMMITTEES

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Dr. Samuel W. Lambert .....	College of P. and S. of New York
President J. H. T. Main.....	Iowa College
Dr. W. S. Fullerton ..	Minnesota State Board of Medical Examiners

### *Committee on Preliminary Medical Education.*

Dr. John H. Long, Chairman ...	Northwestern Univ. Medical School
Dr. Charles R. Bardeen .....	University of Wisconsin
Dr. George A. Piersol.....	Dept. of Medicine, Univ. of Pennsylvania

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## COUNCIL ON MEDICAL EDUCATION OF THE AMERICAN MEDICAL ASSOCIATION.

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*Third Annual Conference, held at Chicago, April 29, 1907.*

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The Chairman, DR. A. D. BEVAN, Chicago, presiding.

Besides the members of the Council, eighty-four delegates were present, representing 22 state examining boards, 18 state medical societies, the 3 departments of the government services, 3 college associations, and 15 literary and medical colleges.

### DELEGATES.

FROM STATES AND STATE BOARDS: *Colorado*, S. D. Van Meter, Denver; *Idaho*, W. F. Howard, Pocatello; *Illinois*, George W. Webster, Chicago; *Indiana*, W. A. Spurgeon, Muncie, and W. T. Gott, Crawfordsville; *Iowa*, A. P. Hanchett, Council Bluffs; *Kentucky*, Chester A. Mayer, Louisville; *Massachusetts*, E. B. Harvey, Boston; *Michigan*, Beverly D. Harrison and Oscar Le Seure, Detroit; *Minnesota*, W. S. Fullerton, St. Paul; *Missouri*, R. H. Goodier Hannibal, and A. H. Hamel, DeSoto; *Nebraska*, Benjamin F. Bailey, Lincoln; *New Jersey*, J. W. Bennett, Long Branch; *New York*, George E. Gorham, Albany, and William Warren Potter, Buffalo; *North Dakota*, F. R. Smyth, Bismarck; *Ohio*, H. E. Beebe, Sidney, and A. Ravogli, Cincinnati; *Oklahoma*, J. W. Baker, Enid; *Oregon*, A. C. Pantou, Portland; *Utah*, Ralph T. Richards, Salt Lake City; *Vermont*, W. Scott Nay, Underhill; *Washington*, J. B. Eagleson, Seattle; *West Virginia*, John L. Dickey, Wheeling; *Wisconsin*, W. T. Sarles, Sparta, A. P. Andrus, Ashland, J. V. Stevens, Jefferson, P. H. McGovern, Milwaukee, and A. B. Bailey, Fennimore.

FROM STATE MEDICAL SOCIETIES: *Illinois*, Charles L. Mix, Chicago, and Frank P. Norbury, Jacksonville; *Indiana*, L. F. Page, Indianapolis; *Iowa*, D. S. Fairchild, Des Moines, and C. J. Saunders, Fort Dodge; *Kansas*, M. F. Jarrett, Fort Scott; *Kentucky*, W. H. Wathen, Louisville; *Maine*, Charles E. Williams, Auburn; *Maryland*, Charles F. Bevan, Baltimore; *Missouri*, Walter B. Dorsett, St. Louis; *Nebraska*, H. Winnett Orr, Lincoln; *North Dakota*, A. L. McDonald, Grand Forks; *Ohio*, Robert H. Grube, Xenia, and R. E. Skeel, Cleveland; *Oklahoma*, J. O. Glenn, Stroud; *Tennessee*, George H. Price,



Nashville; *Utah*, S. C. Baldwin Salt Lake City; *Virginia*, R. H. Whitehead, Charlottesville; *West Virginia*, S. L. Jepson, Wheeling; *Wisconsin*, E. Evans, La Crosse.

FROM OTHER ORGANIZATIONS: *United States Army*, Assistant Surgeon-General P. F. Harvey, Chicago; *United States Navy*, Assistant Surgeon N. T. McLean, Chicago; *United States Public Health and Marine-Hospital Service*, Surgeon G. B. Young, Chicago; *Southern Medical College Association*, Lewis C. Morris, Birmingham; *Association of American Medical Colleges*, W. J. Means, Columbus, Ohio, and Fred C. Zapffe, Chicago; *American Medical Association*, George H. Simmons, Chicago; *American Institute of Homeopathy*, Charles J. Walton, Cincinnati, N. B. Delameter, Chicago, and Benjamin F. Bailey, Lincoln, Neb.; *American Medical Editors' Association*, Allen B. Kanavel, W. C. Abbott and W. F. Waugh, Chicago.

FROM LITERARY AND MEDICAL COLLEGES: *Northwestern University*, Dean Thomas F. Holgate, Evanston; *University of Chicago*, Dean Albion W. Small, Chicago; *Iowa College*, President J. H. T. Main, Grinnell; *Vanderbilt University*, Chancellor J. H. Kirkland, Nashville, Tenn.; *Lake Forest University*, R. H. McKee and Cornelius Betien, Lake Forest, Ill.; *University of Wisconsin*, Charles R. Bardeen, Madison; *Lewis Institute*, Lewis Gustafson, Chicago; *Rush Medical College*, Frank Billings, John M. Dodson and Ludwig Hektoen; *Indiana University School of Medicine*, Burton D. Myers, Bloomington; *Northwestern University Medical School*, J. H. Long and N. S. Davis, Chicago; *College of Physicians and Surgeons*, Charles S. Bacon, Chicago; *University of Iowa, Homeopathic Department*, George Royal, Iowa City; *University of Michigan, Homeopathic Department*, W. B. Hinsdale, Ann Arbor; *American College of Medicine and Surgery*, William L. Secor, Chicago; *University of Oklahoma*, D. C. Hall, Norman.

Others present were Richard M. Fletcher and A. R. McDonald, Chicago.

The conference was called to order at 10 a. m. by the chairman, Dr. Arthur Dean Bevan, Chicago, who delivered the following address:

#### CHAIRMAN'S ADDRESS.

*Gentlemen, Delegates from the State Licensing Bodies, from the state medical societies, from the National Institute of Homeopathy, from the medical college associations, from the Confederations of State Licensing Boards, from the United States Medical Corps and from schools and liberal arts, officers of the American Medical Association and invited guests:*

The Council on Medical Education of the American Medical Association has invited you to this third annual conference to discuss the subject of medical education in America and to

ask your advice and cooperation in the effort to elevate the standards of medical education in this country.

We welcome you to this conference and thank you for your presence in the name of the American Medical Association.

It would seem well first to review briefly the work of the Council as presented in the reports of the last two annual conferences and to present to you fully the work of the past year. In 1904 the Council on Medical Education was created by the American Medical Association to act as its agent in the efforts to elevate the standards of medical education. Its functions are to make an annual report on the existing conditions of medical education and to make suggestions which may lead to the gradual improvement in these conditions.

#### THE PREVIOUS HANDICAP.

The work of the committees on education which, before 1904, had undertaken this task had not been as satisfactory as was desired, chiefly because new men were appointed on this committee each year, and this short period was not sufficient time to enable the members of the committee to become familiar with the enormous and complex problems presented by the medical laws of fifty states and territories, by the widely varying conditions found in the different sections of our country and the even greater differences in standards of both preliminary requirement and medical curriculum demanded and offered by more than one hundred and fifty medical schools.

These committees worked under the disadvantage of having no permanent organization, no permanent headquarters, no permanent secretary and no appropriation, without which an extensive investigation was impossible.

The Council on Medical Education was created with the purpose of overcoming some of these disadvantages. It is the desire to make it a permanent national bureau on medical education, with permanent headquarters, with a trained clerical force in charge of the large amount of correspondence and statistical work which is required in order to collect and disseminate the facts in regard to the medical laws of more than fifty states, the results of examinations before more than fifty state licensing boards and the licensure each year of more than seven thousand physicians; the work of the more than one hundred and fifty schools, and we hope before long the facts in regard to the preliminary education of each matriculate in medicine.

Such a national bureau on medical education can have no legal powers. It can not be too often repeated that the legal power to control medical practice rests, and should always and will always rest, in the hands of the state licensing boards.

#### THE NEED OF A NATIONAL BUREAU.

Nevertheless it is clear that a national bureau of medical education is a necessity, and it is also clear that the publicity given to the evidence which such a bureau can collect may be of great service in securing needed reforms.

The Council felt from the beginning that it was of the greatest importance to secure the cooperation of those most influential and most interested in the matter of medical education, and with that end in view established an annual conference on medical education at which it could present to the representatives of the state boards and all specially interested the results of its year's work and confer with them as to the best line of future action.

The first annual conference was held in Chicago, April 20, 1905. At this conference the questions of preliminary educational requirement, the medical curriculum and the relation of the college of liberal arts to the medical school were discussed. As a result of this conference the Council formulated an ideal standard to work for in the future and a minimum standard for the time being. This last you are all familiar with. It is briefly a preliminary education sufficient to enable the student to enter the freshman class of our recognized universities and the passing on this education by a state official and the graduation from an approved medical school, requiring a four-year course of not less than 30 weeks, 30 hours each week, each year, and finally the passing of an examination for licensure before a state board.

May 12, 1906, the second annual conference was held, at which probably the most important subject was the report of the standing of medical schools based on the showing made by their graduates before state boards. The medical schools were divided into four classes: Table 1, with less than 10 per cent. of rejections; Table 2, with from 10 to 20 per cent. of rejections; Table 3, with more than 20 per cent. of rejections, and Table 4, an unclassified list of schools which did not offer sufficient data to enable them to be classified. These tables will be published each year and have, it is believed, been of much service in elevating medical standards.

At the last conference an important committee was appointed, with instructions to report at this conference; the committee on the question of giving credit for subjects required in the medical curriculum taken in colleges of liberal arts. Since the last conference, at a meeting of the Council, it was unanimously agreed to recommend that by 1910, in addition to the preliminary education sufficient to enable the student to enter the freshman year of our recognized universities, that one year of physics, chemistry and biology and one modern language, preferably German, be required before the student can begin the study of medicine; a committee to present this important subject will report at this conference.

#### INSPECTION OF MEDICAL COLLEGES.

Probably the most important work undertaken by the Council during the past year has been the personal inspection of the medical schools of the United States to ascertain the exact character of their work and the attempt to classify these schools and mark them on a civil service basis. This has been a large and onerous task, the country was divided into sections

and the 160 schools visited by some member of the Council or by the secretary, in most instances by both the secretary and some member of the Council.

This work has been, we believe, of much value and has enabled the Council to form a better idea of existing conditions of medical education than could be obtained in any other way. The schools were marked as an individual might be in taking a civil service examination.

The following ten points making a possible 100 were taken into consideration:

1. Showing of graduates before state board examinations.
2. Requirements and enforcement of satisfactory preliminary education.
3. Character and extent of college curriculum.
4. Medical school buildings.
5. Laboratory facilities and instructions.
6. Dispensary facilities and instruction.
7. Hospital facilities and instruction.
8. Extent to which first two years are officered by men devoting entire time to teaching and evidences of original research work.
9. Extent to which the school is conducted for the profit of the faculty directly or indirectly rather than teaching.
10. Libraries, museums, charts, etc.

These marks were obtained from a full report furnished by the school and also from personal inspection covering these points.

We have then arranged the school into six classes: A, B, C, D, E and F.

*The A class, being from 90 to 100.*

*The B class, being from 80 to 90.*

*The C class, being from 70 to 80.*

These three classes above 70 form an accepted list and it is recommended that the state boards recognize these schools as being up to standard.

*The D and E class, being from 50 to 70.*

It is believed that these schools should be recognized, provided that they make improvements, which will bring their work up to the necessary grade of 70.

*The F class, being 50 and below.*

It is believed that these schools should not receive the recognition of the state boards.

In making this inspection the Council has been exceedingly lenient in marking the poorer schools. It believes that this first report should be presented to the state licensing boards and to this conference and should not be published with details at present; that a minimum standard of what shall constitute a recognized medical school be agreed on and that the schools below this standard be given a reasonable time to bring themselves up to this acceptable standard. In case they do not, their standing should be published and they should no longer be recognized by the state boards.

There are in this country 160 medical schools; about as many as there are in all the countries of Europe combined. The schools in this country represent all grades,

from the very highest, as high probably as those of any country in the world, to the very lowest, a number being little better than diploma mills. On this inspection we have found schools which are absolutely worthless, without any equipment for laboratory teaching, without any dispensaries, without any hospital facilities; some which are no better equipped to teach medicine than is a Turkish-bath establishment or a barber-shop. Many of them are little more than quiz classes, in which men are drilled for the purpose of passing state board examinations. Some of the schools which we inspected are conducted by men in good standing in the profession, but in about the way that schools were conducted 25 or 30 years ago; simply didactic lectures and quiz classes without any proper laboratory or clinical facilities, and some of these men apparently do not realize the very bad work they are doing in the light of modern medicine.

I desire to present a few facts shown by this inspection:

1. Of the 160 schools, 82 received markings above 70, 46 markings between 50 and 70, 32 below 50.

2. It was clearly shown by this inspection that medical schools conducted solely for profit are a menace and should not be recognized.

3. Night schools attempting to educate a student in the hours from 7 to 10 p. m., usually after the student has devoted his day to some occupation in which he earns his living, should not be recognized by any state board, especially when it is found in the good schools that four years of nine months six days in the week from 8 a. m. to 5 p. m., is barely sufficient time to devote to a medical course.

4. Many schools are conducted for the purpose of preparing a student to pass a state board examination and not with the object of making him a competent practitioner.

5. A student can be prepared in a quiz class in a comparatively short course to pass a written examination before a state board and yet be absolutely ignorant of laboratory work, dispensary or hospital work, and utterly incompetent to begin the practice of medicine. This fact shows the necessity of inspecting the schools as to the actual character of their work, of making the written examination very practical and of including a practical examination in the laboratory and possibly later on patients in the state board examination for licensure.

6. The most important fact brought out in this inspection is this: In this country we need money for medical education. It costs more to educate a medical student than he can pay in the way of fees. Medical education must secure state aid and private endowment.

7. Every state university now in existence or established later should have a strong, liberally supported medical department. No better investment can be made by any state than the establishment and support of such a medical department.



Such a department, at least the clinical years, should be in the largest center of population in the state, and in close touch with the various departments of the state board of health.

8. The public must be taught the necessities and the possibilities of modern medicine, and philanthropists shown that medicine well deserves the same support that has been given to theology, to colleges of liberal arts, to libraries, etc. Philanthropists will not endow medical schools which are private corporations and conducted for profit. Such schools should change their organization so that they can ask for and secure necessary endowments.

9. It is in the power of the state boards and the organized profession to place American medicine on an acceptable plane.

10. Already about 50 schools have agreed to require, by 1910 or before, one year of university physics, chemistry and biology, and one language as a preliminary education before matriculating in medicine.

#### WHAT SHOULD CONSTITUTE A COLLEGE IN GOOD STANDING?

11. It is necessary to agree on a standard of what shall constitute a medical college in good standing. If, as a result of this conference, the delegates from the state boards agree to require within a reasonable time the following standard of our medical schools, we should soon place ourselves on a plane equal to that of any country in the world:

(a) Preliminary education sufficient to enter the freshman class of our universities plus, after a date to be agreed on, one year of physics, chemistry and biology and one modern language. This preliminary education to be passed on by an officer selected by the state licensing board.

(b) Two years of study, largely laboratory work in anatomy, physiology, pharmacology and pathology in well equipped laboratories, officered by trained men devoting their time to those subjects.

(c) Two years of clinical work largely in dispensaries and hospitals, the dispensary material in the proportion of at least 10,000 per year for 100 students in the senior class and the hospital in proportion to a daily average of 200 patients to 100 students in the senior class.

(d) The curriculum and character of both laboratory and clinical work to be satisfactory to the state licensing board, which shall inspect the same each year.

If the state boards represented at this conference will unite to secure these requirements and notify the schools that unless they come up to this standard by a date to be agreed on, that they will not be recognized, we shall take the greatest step forward that has ever been made in medical education in this country. What the members of this conference agree on will not be legally binding on any state board or any school, but it will be of great weight, because it will ultimately be agreed to by the majority of the state boards, and no school can continue

to exist in defiance of the rulings of any considerable number of state boards.

Our inspection has shown that there are a number of schools which have no equipment to teach medicine, no possible right to teach medicine nor to claim recognition. It has shown that there are a number of other schools that are deficient, and these should be urged to secure proper equipment and to come up to a standard sufficient to secure general recognition.

This work shows the necessity of a system of annual inspection made by the state boards, possibly jointly with a committee from the Council on Medical Education, so that the results of the entire country can be compiled and furnished to each state board as an official list of colleges worthy of recognition.

As a result a number of schools will consolidate, as they have already done in Kansas City, Louisville, Columbus and other cities; a number of proprietary schools which are conducted for the purpose of profit, are in fact conducted at a loss to their faculties and many of these will go out of existence.

Instead of 160 schools as we now have, we should probably have less than 100 schools which could secure the general recognition of the state boards. And these schools we must unite to strengthen. We must secure for them state aid and private endowment, we must start an active, organized propaganda for money for medical education, we must enlist in this service the local and state medical societies, the state licensing boards, the national medical associations, individual physicians and citizens of influence, and we must make these efforts permanent and continuous. We must make for medicine in this country of great wealth and great population and of high average intelligence the place which it deserves.

ARTHUR DEAN BEVAN, *Chairman.*

### Secretary's Report.

*Mr. Chairman and Gentlemen:*—The work of the Council on Medical Education for the past year is as follows:

#### INSPECTION OF MEDICAL COLLEGES.

In order to obtain a more accurate knowledge of conditions under which medical schools are working and of the laboratory and clinical facilities held by each college for teaching modern medicine, the Council had one or more representatives visit each of the 160 medical colleges in the country. This was supplemented by obtaining written reports from the colleges.

In this research the Council has endeavored to treat all colleges alike, making allowances for the differences between the various schools of medicine, feeling that where the college upheld proper standards of preliminary education, offered good courses in the fundamental branches of medicine and had a fair amount of clinical material, the minor differences in treat-

ment could be well ignored. Two reputable practitioners of any one school of medicine will probably differ fully as much in their methods of treatment when in actual practice, as will practitioners of two different schools of medicine.

In classifying the colleges every detail has been carefully studied. The size of the city where the college is located, as well as any and all special conditions, such as state hospitals, etc., whereby clinical material is made available, were inquired into. The college buildings were considered with regard to their number, size, condition, arrangement, proximity and utility. Hospitals were also considered, careful note being made of the number of beds, the extent to which students have access, its proximity to and control by the college. Dispensaries have received proper attention—note being made in regard to the rooms, equipment, number of patients, number of visits, use of by the students and nearness to the college. Each subject of the college curriculum was individually studied—for the fundamental branches, note being made of the size and equipment of laboratories, the presence of paid teachers devoting their entire time to instruction and research, and, for the clinical branches, the amount and variety of clinical material available to teach the subject under consideration.

The supply of charts, models and microscopes were particularly inquired into and at the same time the size of the classes needing to use them. Careful notes regarding the medical library and the museum were made, together with their accessibility and usefulness for teaching. Careful investigation was made in regard to the entrance requirements, the character and extent of the college curriculum and the methods of teaching of each college. The sources of income were noted and inquiry was cheerfully made as to the future prospects of each school. The showing made by the graduates of each college before state examining boards was naturally taken account of. College announcements were carefully reviewed and a careful comparison made with the facts learned from the actual inspection. The character of the men composing the college faculty was considered, every evidence of activity was noted and due credit given where good, honest work was being done. In fact, care was taken to get every fact available that would give an accurate knowledge of what each college was and the kind of work it was doing.

In order to properly credit each school the data collected was grouped under ten different heads, these being so selected that they might have equal weight and, therefore, be marked on the scale of 100. An average taken then represented the standing of the school. The ten heads are as follows: (1) The successes of graduates of the school before state examining boards; (2) the question of requirement and enforcement of satisfactory preliminary education; (3) the general character and extent of college curriculum; (4) the medical school

buildings; (5) laboratory facilities and instruction; (6) dispensary facilities and instruction; (7) hospital facilities and instruction; (8) extent to which the first two years are officered by men devoting their entire time to teaching and the evidences of original research; (9) extent to which the school is conducted as an institution for teaching medicine, rather than as a means for the profit of the faculty, directly or indirectly; and (10) the owning of a library, museum, charts, models, stereopticons, etc. The result from this research is as follows: Of the 160 schools, 81 or 50.6 per cent., were above 70; 47, or 20 per cent., were between 50 and 70, while 32, or 19.6 per cent., were below 50.

#### STATE EXAMINING BOARD STATISTICS.

A year ago at our conference a classification of the medical schools was made based on the state board examinations for 1904. It will be remembered that 47 schools received less than 10 per cent. of failures, 27 were between 10 and 20 per cent., and 38 had more than 20 per cent. There were 37 schools in regard to which there was insufficient data to permit of classification.

With the report of the state board examinations for 1905, which was published in THE JOURNAL of the American Medical Association, Aug. 25, 1906, another classification was made resulting in 45 schools having less than 10 per cent. of failures, 22 schools with between 10 and 20 per cent., and 40 schools above 20 per cent. There were 46 schools in the unclassified list.

The classification based on the examinations held during 1906, however, gives 62 schools having less than 10 per cent. of failures, 24 having between 10 and 20 per cent., 43 having over 20 per cent., and 20 unclassified, a total of 149. The following comparison with previous totals is interesting:

	Less than 10.	10 to 20.	Above 20.	Unclassified.	Total.
1904 .....	47	27	38	37	149
1905 .....	45	22	40	46	153
1906 .....	62	24	43	20	149

The following tables give the classification of schools, based on the state board examinations held during 1906:

TABLE 1.—COLLEGES HAVING LESS THAN 10 PER CENT. OF FAILURES BEFORE STATE BOARDS IN 1906.

College.	Total Examined	Number Passed.	Number Failed.	Per cent. Failed.	No. of States.
ALABAMA.					
Birmingham Medical College.....	13	13	0	0.	2
Medical College of Alabama.....	28	28	0	0.	3
CALIFORNIA.					
Cooper Medical College.....	34	33	1	5.9	2
University of California.....	21	19	2	9.5	3
COLORADO.					
Colorado School of Medicine.....	4	4	0	0.	3
CONNECTICUT.					
Yale University Medical School.....	21	21	0	0.	6

## GEORGIA.

Atlanta College of Phys. and Surg.....	65	62	3	4.6	9
Georgia Coll. of Eclectic Med. and Surg.	19	18	1	5.3	3
Atlanta School of Medicine.....	20	19	1	5.0	5

## ILLINOIS.

American Medical Missionary College...	23	22	1	4.4	14
Bennett Coll. of Eclectic Med. and Surg.	67	61	6	5.9	11
College of Physicians and Surgeons.....	259	242	17	6.6	24
Northwestern Univ. Medical School.....	157	154	3	1.9	18
Rush Medical College.....	135	132	3	2.2	20

## INDIANA.

Indiana Medical College.....	136	124	12	8.8	12
Drake University .....	12	12	0	0.	4

## IOWA.

State University of Iowa (R).....	64	64	0	0.	7
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## KANSAS.

Kansas Medical College.....	17	17	0	0.	1
University of Kansas.....	64	62	2	3.1	5

## LOUISIANA.

Tulane University.....	103	104	4	3.7	14
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## MAINE.

Medical School of Maine.....	21	21	0	0.	3
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## MARYLAND.

Johns Hopkins Medical School.....	75	74	1	1.3	24
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## MASSACHUSETTS.

Harvard University Medical School.....	104	101	3	2.9	15
Tufts College Medical School.....	85	80	5	5.9	10

## MICHIGAN.

Detroit College of Medicine.....	81	79	2	2.5	5
Michigan College of Med. and Surg.....	12	12	0	0.	4
Grand Rapids Medical College.....	6	6	0	0.	3
University of Michigan (R).....	78	77	1	1.3	22
University of Michigan (H).....	18	18	0	0.	6

## MISSOURI.

University Medical College.....	52	48	4	7.7	4
Washington University.....	84	79	5	6.0	11
University of Missouri.....	11	11	0	0.	5

## NEW YORK.

Albany Medical College.....	37	36	1	2.7	5
College of Physicians and Surgeons.....	180	173	7	3.9	15
Cornell University .....	63	62	1	1.6	9
Long Island College Hospital.....	69	67	2	2.9	6
New York Homeopathic Med. Coll.....	35	33	2	5.7	7
University and Bellevue Med. Coll.....	56	53	3	5.4	7
Syracuse University.....	25	24	1	4.0	1
University of Buffalo.....	47	44	3	6.4	6

## OHIO.

Western Reserve University.....	20	20	0	0.	1
Cleveland College of Phys. and Surgs..	24	23	1	4.2	5
Cleveland Homeopathic Med. Coll. ....	15	14	1	6.7	5
Medical College of Ohio.....	44	44	0	0.	11
Miami Medical College.....	27	27	0	0.	7
Ohio Medical University.....	53	49	4	7.5	6
Toledo Medical College.....	11	10	1	9.1	3

## PENNSYLVANIA.

Temple Medical College.....	13	13	0	0.	2
University of Pennsylvania.....	129	126	3	2.3	24
Hahnemann Med. Coll. of Philadelphia.	59	59	0	0.	8
Jefferson Medical College.....	218	197	21	9.6	31
Woman's Med. Coll. of Pennsylvania...	37	36	1	2.7	11
Medico-Chirurgical College.....	112	104	8	7.1	13

## TENNESSEE.

Vanderbilt University.....	29	28	1	3.4	12
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## TEXAS.

Fort Worth University.....	14	14	0	0.	3
University of Texas.....	19	19	0	0.	3
Baylor University .....	11	10	1	9.1	2



VERMONT.					
University of Vermont.....	51	48	3	5.9	9
VIRGINIA.					
Medical College of Virginia.....	55	50	5	9.1	9
University College of Medicine.....	31	29	2	6.5	9
University of Virginia.....	37	36	1	2.7	18
WISCONSIN.					
Wisconsin College of Phys. and Surg....	15	14	1	6.7	2
Totals .....	3,430	3,279	151	4.4	..

TABLE 2.—COLLEGES HAVING BETWEEN 10 AND 20 PER CENT. OF FAILURES BEFORE STATE BOARDS IN 1906.

College.	Total Examined.	Number Passed.	Number Failed.	Per cent. Failed.	No. of States.
ARKANSAS.					
Arkansas University.....	8	7	1	12.5	4
CALIFORNIA.					
College of Physicians and Surgeons.....	26	22	4	15.4	5
GEORGIA.					
Medical College of Georgia.....	37	32	5	13.5	3
ILLINOIS.					
Hahnemann Medical College.....	69	62	7	10.1	13
Illinois Medical College.....	43	37	6	14.0	14
Jenner Medical College.....	36	31	5	13.9	2
National Medical University.....	15	13	2	13.3	3
American College of Med. and Surg.....	34	30	4	11.8	8
Dearborn Medical College.....	37	31	6	16.2	5
KENTUCKY.					
University of Louisville.....	46	33	8	17.4	19
MARYLAND.					
College of Physicians and Surgeons.....	77	65	12	15.6	16
University of Maryland.....	101	82	19	18.8	21
MASSACHUSETTS.					
Boston University.....	39	33	6	15.4	11
MINNESOTA.					
University of Minnesota (R).....	70	61	9	12.8	9
MISSOURI.					
Kansas City Hahnemann Med. Coll.....	7	6	1	14.3	3
NEBRASKA.					
Lincoln Medical College.....	17	14	3	17.7	4
NEW HAMPSHIRE.					
Dartmouth Medical College.....	20	17	3	15.0	6
NEW YORK.					
Eclectic Medical Coll. of New York.....	16	14	2	12.5	3
NORTH CAROLINA.					
North Carolina Medical College.....	32	26	6	18.7	6
OHIO.					
Eclectic Medical Institute.....	40	33	7	17.5	11
Starling Medical College.....	33	28	5	15.2	3
PENNSYLVANIA.					
Western Pennsylvania Medical College...	61	49	12	19.7	7
SOUTH CAROLINA.					
Medical College of South Carolina.....	17	15	2	11.8	5
WISCONSIN.					
Milwaukee Medical College.....	17	15	2	11.8	6
Totals .....	898	761	137	15.3	

TABLE 3.—COLLEGES HAVING OVER 20 PER CENT. OF FAILURES BEFORE STATE BOARDS IN 1906.

College.	Total Examined.	Number Passed.	Number Failed.	Per cent. Failed.	No. of States.
<b>CALIFORNIA.</b>					
University of Southern California.....	29	23	6	23.3	3
<b>COLORADO.</b>					
Denver and Gross College of Medicine....	13	9	4	30.8	9
<b>DISTRICT OF COLUMBIA.</b>					
George Washington University.....	76	57	19	25.0	13
Georgetown University.....	36	27	9	25.0	13
Howard University .....	34	27	7	20.6	15
<b>ILLINOIS.</b>					
College of Med. and Surg. (Ph.M.).....	9	4	5	55.5	3
Hering Medical College.....	14	8	6	42.8	6
<b>IOWA.</b>					
Keokuk Medical Coll., Coll. of P. and S.	74	49	25	33.8	8
Sioux City College of Medicine.....	17	13	4	23.5	2
<b>KENTUCKY.</b>					
Hospital College of Medicine.....	37	26	11	29.7	14
Kentucky School of Medicine.....	37	20	17	45.9	14
Louisville Medical College.....	43	32	11	25.6	15
Southwest. Homeopathic Med. Coll.....	4	1	3	75.0	2
Kentucky University.....	47	31	16	34.0	21
<b>LOUISIANA.</b>					
Flint Medical College .....	24	11	13	54.2	3
<b>MARYLAND.</b>					
Baltimore Medical College.....	144	105	39	27.0	20
Baltimore University .....	35	10	25	71.4	11
Maryland Medical College.....	67	30	37	55.2	20
<b>MASSACHUSETTS.</b>					
College of Physicians and Surgeons.....	30	18	12	40.0	6
<b>MINNESOTA.</b>					
Hamline University .....	43	30	13	30.2	3
<b>MISSOURI.</b>					
Eclectic Medical University.....	16	7	9	56.2	3
Ensworth Central Medical College.....	60	32	28	46.7	7
Barnes Medical College.....	125	63	57	45.6	16
St. Louis University.....	196	141	55	28.0	16
St. Louis Coll. of Phys. and Surg.....	77	35	42	54.5	12
American Medical College.....	14	10	4	28.6	6
Homeopathic Medical College.....	3	1	2	66.7	3
<b>NEBRASKA.</b>					
University of Nebraska.....	20	12	8	40.0	6
Creighton Medical College.....	53	42	11	20.8	8
<b>NORTH CAROLINA.</b>					
Leonard School of Medicine.....	55	31	24	43.6	11
University of North Carolina.....	13	10	3	23.1	3
<b>OREGON.</b>					
University of Oregon.....	28	20	8	28.6	3
Willamette University.....	21	4	17	81.0	3
<b>TENNESSEE.</b>					
Tennessee Medical College.....	23	14	9	39.1	4
Knoxville Medical College.....	3	1	2	66.7	2
University of Nashville.....	63	52	16	23.5	14
University of Tennessee.....	33	19	14	42.4	9
Meharry Medical College.....	107	58	49	45.7	19
Memphis Hospital Medical College.....	93	72	21	22.6	8
University of the South.....	38	19	19	50.0	17
Chattanooga Medical College.....	48	34	14	29.2	10
<b>TEXAS.</b>					
Gate City Medical College.....	4	2	2	50.0	2
College of Physicians and Surgeons.....	8	3	5	62.5	4
Totals .....	1,919	1,218	701	36.5	..

TABLE 4.—UNCLASSIFIED COLLEGES.

College.	Total Examined.	Number Passed.	Number Failed.	Per cent. Failed.	No. of States.
CALIFORNIA.					
Hahnemann Medical College.....	5	5	0	0.	1
California Medical College.....	4	1	3	75.0	1
Oakland College of Med. and Surg.....	4	4	0	0.	1
College of Phys. and Surg., Los Angeles	4	4	0	0.	1
COLORADO.					
Denver Homeopathic Medical College....	1	0	1	100.0	1
INDIANA.					
Physio-Medical College of Indiana.....	6	6	0	0.	1
Eclectic Medical College of Indiana.....	6	5	1	16.7	1
IOWA.					
Univ. of Iowa, Homeopathic Dept.....	..	..	..	.....	..
KENTUCKY.					
Louisville National Medical College.....	..	..	..	.....	..
MARYLAND.					
Southern Homeopathic Medical College..	3	1	2	66.7	1
Woman's Medical College.....	1	1	0	0.	1
MICHIGAN.					
Detroit Homeopathic Medical College....	7	7	0	0.	1
MINNESOTA.					
Univ. of Minnesota, Homeopathic Dept.	2	2	0	0.	2
MISSISSIPPI.					
Mississippi Medical College.....	..	..	..	.....	..
NEW YORK.					
New York Med. Coll. for Women.....	8	8	0	0.	1
OHIO.					
Pulte Medical College.....	2	1	1	50.0	1
TENNESSEE.					
University of West Tennessee.....	2	0	2	100.0	2
College of Phys. and Surg., Memphis....	..	..	..	.....	..
TEXAS.					
Physio-Medical College of Texas.....	2	2	0	0.	1
Southwestern University.....	6	5	1	16.7	1
Totals .....	63	52	11	17.5	..

As has long been recognized, the weakest part of our system of medical education to-day is the low standard of preliminary requirements. There was a time, doubtless, when low standards were excusable, but now when we consider the large number of schools and colleges which offer abundant opportunities to any one who has ambition enough to secure a liberal education whether he has ready money or not, there is scarcely any excuse for not requiring a fair standard of preliminary education. There are still a number of schools where no attention apparently is paid to the students' entrance qualifications.

The weakest point in the equipment and teaching facilities of medical schools is, naturally, the lack of laboratories and equipment for the work of the first two years of the medical course, or, as they are often called, the fundamental branches.

The need of good, well-equipped laboratories, as well as having them officered by trained instructors paid to devote their entire time to teaching and research naturally makes this part of the medical course the most expensive. The teaching of the fundamental branches does not carry the advantage to the practicing physician which is found with the clinical branches, therefore, it is difficult to get good men to devote their time to these branches unless they are paid definite salaries. A few schools were found which were weak in this part of the course, although strong in clinical facilities.

Some schools are not developing the college dispensary as they might. Where good quarters have been provided for this department and good men placed on the attending staff, a larger attendance is invariably the result. Some schools situated in large cities, where ample clinical material could be had, are failing to take advantage of it. Others with abundant means at their disposal lack the activity in modern teaching and research which they might have.

Of course, the medical schools need money and all degrees of such need are to be seen. Many schools are dependent solely on the fees of the students to cover the teaching expenses. Some are keeping the teaching expenses within the amount received, and are, therefore, quite deficient in equipment and facilities for teaching modern medicine. Some schools, however, which, although practically depending on students' fees, are manned by faculties who not only spend their time and energy in teaching without pay, but have stood by the school with a devotion most praiseworthy, this being an encouraging fact in medical teaching of to-day. The development of some of these schools, even with the small amount received from students' fees, has been remarkable. Some have fixed high standards and held to them, even though these standards have reduced the number of students and thereby reduced the financial income of the school.

The past few years has witnessed the expenditure of a large amount of money for medical education. New buildings with spacious laboratories and elaborate equipment were to be seen in all sections of the country. Medical education is beginning to attract the attention of men of wealth to its needs, and endowments will follow sooner or later. State legislatures are more readily making appropriations for the development of the medical departments of state universities. From the financial point of view there is reason to believe that a new era is dawning for medical education.

A few important mergers have taken place during the past few months—at Louisville, Ky., where four schools merged into two, and at Columbus, Ohio, where the two colleges merged into one. Combinations at two or three other points also are in prospect. There are still other places where much better medical education could be given, if two or more

schools would join hands, thereby creating one strong school from two or more weaker ones.

The work of the Council in an effort to secure the adoption of the standards recommended by the American Medical Association has had gratifying results. During the latter part of last June a letter was sent to each medical school of the country clearly stating that portion of the American Medical Association's ideal standard relating to the preliminary year in physics, chemistry, biology and languages, and asking whether the faculty of the school would be willing to adopt this as a requirement to apply to all students entering after Jan. 1, 1910. At that time only seven colleges in the country were requiring one or more years of work in a college of arts for admission. There are now 50 medical schools, which either already require one or more years of work in a college of arts or have voted to require this preliminary year in physics, chemistry, biology and languages by Jan. 1, 1910. There are at least 10 other colleges still to be heard from, which will probably make the same requirement. Of the 50 schools named 20 colleges will require at least two years of preliminary work in a college of arts, and 8 others intend to make two years their minimum requirement, although the date for the requirement of the second year has not been definitely determined. On the list are to be found a few weak schools, but the great majority are those which can be fully depended on to live up to their requirements.

#### COLLEGES ADVANCE ENTRANCE REQUIREMENTS.

The following medical colleges either already require as a prerequisite to the study of medicine, in addition to a four-year high school education or its equivalent, one or more years in a college of liberal arts, or have adopted the requirement of a preliminary year to include the subjects of physics, chemistry, biology and one language, to become effective on or before Jan. 1, 1910.

CALIFORNIA.	Years.	In force.
University of California .....	2	Now.
Cooper Medical College.....	1	1910
Coll. of Physicians and Surgeons, San Francisco.	1	1910
Oakland College of Medicine and Surgery.....	1	1910
COLORADO.		
Colorado School of Medicine.....	1	1910
Denver and Gross College of Medicine.....	1	1910
CONNECTICUT.		
Yale Medical School .....	2	1909-10
DISTRICT OF COLUMBIA.		
George Washington University .....	2	1909-10
Georgetown University .....	1	1910
IOWA.		
University of Iowa, College of Medicine.....	1	1909
University of Iowa, College of Medicine.....	2	1910
Drake University Medical Department .....	2	1910
Sioux City College of Medicine.....	2	1910



ILLINOIS.		
Rush Medical College .....	2	Now.
Northwestern University Medical School .....	2	1909-10
American Medical Missionary College.....	1	1909-10
American Medical Missionary College.....	2	1910-11
College of Medicine and Surgery .....	1	1910
Jenner Medical College .....	1	1910
Illinois Medical College .....	1	1910
Chicago College of Medicine and Surgery.....	1	1908
INDIANA.		
Indiana University Medical School.....	1	1910
State College of Physicians and Surgeons .....	1	1910
KANSAS.		
University of Kansas Medical School .....	1	1908-09
University of Kansas Medical School.....	2	1909-10
Kansas Medical College .....	1	1910
LOUISIANA.		
Tulane University, Medical Department.....	1	1910
MARYLAND.		
Johns Hopkins Medical School .....	Degree	Now.
College of Physicians and Surgeons, Baltimore ...	1	1910
MASSACHUSETTS.		
Harvard University Medical School .....	Degree	Now.
College of Physicians and Surgeons, Boston .....	1	1910
MICHIGAN.		
University of Michigan (R.).....	2	1909
MINNESOTA.		
University of Minnesota (R.).....	2	1907-08
University of Minnesota (H.) .....	2	1907-08
MISSISSIPPI.		
University of Mississippi Medical Department....	1	1910
MISSOURI.		
University of Missouri .....	1	Now.
St. Louis University, Medical Department.....	1	1909
Washington University, Medical Department.....	1	1910
NEBRASKA.		
University of Nebraska College of Medicine.....	1	1908
NORTH CAROLINA.		
University of North Carolina.....	1	1909
Wake Forest School of Medicine .....	2	1908-09
NORTH DAKOTA.		
University of North Dakota.....	2	Now.
OHIO.		
Medical College of Ohio .....	1	1910
Western Reserve University .....	3	Now.
Cleveland College of Physicians and Surgeons....	1	1910
Cleveland Homeopathic Medical College .....	1	1910
Miami Medical College .....	1	1910
OKLAHOMA.		
University of Oklahoma .....	1	1910
PENNSYLVANIA.		
University of Pennsylvania .....	1	1909-10
University of Pennsylvania .....	2	1910-11
TENNESSEE.		
University of Tennessee .....	1	1910
TEXAS.		
University of Texas.....	1	1910
UTAH.		
University of Utah, Medical Department .....	1	1909-10
University of Utah, Medical Department.....	2	1910-11
VIRGINIA.		
University of Virginia (3 year high school +)....	2	1901

Practically all these schools have expressed their intention to require that the year in physics, chemistry and biology be taken in a college of arts.

## LAWS GOVERNING MEDICAL PRACTICE.

The progress toward securing high standards in the various states through the activity of the examining boards has been very encouraging. Many states have secured new laws or important amendments, resulting in more uniform and higher standards. A year ago 13 states still allowed non-graduates to obtain the license to practice medicine. Of that number the examining boards of two of these states, Oregon and Hawaii, have recently established the graduation requirement by board rulings, being legally authorized to do so. Of the other eleven states, however, amendments to the state laws were necessary. Efforts have been made to secure these amendments by practically all, resulting successfully in Colorado, Missouri, New Mexico, Texas and West Virginia. The number of states allowing non-graduates to secure license has, therefore, been reduced to 6, these being Alabama, Arkansas, Massachusetts, Mississippi, Rhode Island and Tennessee. A report received is most favorable that the amendment will be secured in Alabama.

Delaware secured an amendment requiring that applicants must have had four years of study in a recognized medical school, leaving only one state, Georgia, which only provides for a three-year course. Minnesota has secured an amendment to their law requiring that graduates of 1911 and thereafter, in order to receive license to practice medicine in that state, must have had preliminary to the study of medicine, in addition to a four-year high-school education, at least two years' work in a college of liberal arts. North Dakota has made the same provision for graduates of 1910 and thereafter. Connecticut will require, after Jan. 1, 1912, in addition to a four-year high-school education, one year of nine months which shall include physics, chemistry, biology and one language. Similar action on the part of other state boards will hasten the time when the standards of medical education in this country will be as high as those of other leading nations. The requirement of an additional year of preliminary education by state examining boards will be an added encouragement to the 51 colleges which of their own volition have adopted this standard.

Greatly improved medical practice acts or important amendments have been secured recently in California, Delaware, Minnesota, Missouri, New Mexico, Tennessee, Texas, Utah, Vermont, West Virginia, Wisconsin, and possibly in other states which have not been reported to us. Reports show that new practice acts or amendments are being urged in Alabama, Colorado, Connecticut, Michigan, Ohio, Pennsylvania and New York, with promise of success in the majority of cases. Important board rulings have been voted by a number of state boards, at least in Colorado, Oregon, Hawaii, Illinois, Michigan, Minnesota and New Hampshire. Probably no time has

ever witnessed so widespread an effort for better laws. The tendency is rapid toward more uniform and higher standards.

#### BOOK OF LAWS.

The changes in medical practice acts will be carefully followed up and published in the Book of Laws, a new edition of which is issued about every four months. Registration requirements in foreign lands, as well as standards of medical education, are also being given in this book so far as they can be obtained. Reports for all changes of the past few months have probably not been received, therefore, we particularly request of the examining boards that notice be sent us of any changes or additions to the laws as presented in this book.

#### RECIPROCITY.

At the last session of the American Medical Association in Boston the work formerly devolving on the Committee on Reciprocity was turned over to the Council on Medical Education. Since the extension of reciprocity depends so much on the securing of equally high standards of medical education and licensure, the Council has bent its energies chiefly to obtain such standards, merely watching and noting the progress of the reciprocity movement. In practically all of the new practice acts secured during the past year and in a number of amendments reciprocity has been provided for. On the whole, the justice of reciprocity is being recognized and the movement favoring it is spreading. Statements showing any licenses issued under the reciprocity clause have been received from 24 different states. The list of states and number so licensed in each is as follows:

Connecticut (eclectic) . . . .	8	Missouri . . . . .	46
Delaware . . . . .	5	Nebraska . . . . .	56
District of Columbia . . . .	11	New Jersey . . . . .	63
Georgia . . . . .	6	New York . . . . .	21
Illinois . . . . .	43	North Dakota . . . . .	21
Indiana . . . . .	21	Ohio . . . . .	23
Iowa . . . . .	63	South Carolina . . . . .	8
Kansas . . . . .	56	South Dakota . . . . .	29
Kentucky . . . . .	2	Texas . . . . .	8
Maryland . . . . .	8	Vermont . . . . .	4
Michigan . . . . .	62	Virginia . . . . .	19
Minnesota . . . . .	42	Wisconsin . . . . .	61

Or a total of 685. A table which shows at a glance just what states reciprocate and on what basis is published regularly in the Book of Laws and revised with each edition of that book. (See Laws, pages 115-116 and table.)

#### WORK OF STATE COMMITTEES.

State committees on medical education have now been appointed in 45 states, or in all states except Alabama, Arkansas, Nevada, South Carolina, Tennessee and Georgia. These committees have done good work in several instances, having studied local conditions extensively and made splendid reports to their state associations. Particularly was this true in

Illinois, Louisiana, Maryland, Minnesota, Missouri, New York, Texas, Virginia and West Virginia. Doubtless other committees have been active also, but have not reported to us.

Through these committees it is hoped that each state medical society will be kept fully informed as to how the standards in their own state compare with the standards throughout the country. These committees can do much to help secure the adoption of the American Medical Association standards in all states by securing for the state examining boards the solid backing of the state medical societies.

In conclusion, the work of the Council for the past year may be briefly outlined as follows:

(a) Collecting, tabulating and publishing the results of state board examinations showing the successes and failures of the graduates of the various medical colleges.

(b) Securing, tabulating and publishing statistics regarding medical students and medical graduates in the United States.

(c) Compiling and publishing abstracts of laws and board rulings governing medical licensure in the United States.

(d) Cooperation with state examining boards, state committees on medical education and with medical colleges in an effort to secure the adoption of the standard of medical education adopted by the American Medical Association.

(e) Collecting of more accurate information regarding medical colleges and their surroundings, particularly concerning the seat, history, buildings, hospitals, laboratories, dispensaries, equipment, college year, etc. This was obtained by securing reports as well as by a systematic inspection of the colleges.

(f) Keeping informed regarding proposed changes in medical practice acts and rendering any assistance possible for the obtaining of advance legislation.

(g) Keeping informed regarding reciprocity and securing from the examining boards reports of licenses issued on that basis.

(h) Collecting from all available sources information bearing on medical education and furnishing it wherever it might be of service. Much has been published in the department of *THE JOURNAL*, entitled Medical Education and State Boards of Registration. Respectfully submitted,

N. P. COLWELL, *Secretary*.

The reports of the chairman and secretary as here given were embodied in a report to the House of Delegates of the American Medical Association at Atlantic City June 3, 1907.

#### Report of Reference Committee on Medical Education.

The Reference Committee to which the report was referred returned the following recommendations:

Dr. F. B. Lund, Section on Surgery and Anatomy, pre-

sented the following report of the Reference Committee on Medical Education:

The Reference Committee on Medical Education of the American Medical Association, to which was referred the report of the Council on Medical Education (1701, 10) reports as follows:

The Council on Medical Education was created by the American Medical Association to act as its agent in an effort to elevate the standards of medical education. The Council's functions are two: To make an annual report on existing conditions in medical schools in the United States, and to make suggestions which shall lead to a gradual improvement in medical education.

### I.

The first of these functions has been well performed, as is evidenced by the Council's present report. The reference committee is of the opinion that the compilation of the tables based upon the standings before state licensing boards of the graduates of each medical school in the United States should be specifically endorsed, and that such an annual compilation shall be indefinitely continued. The reference committee is further of the opinion that the most valuable portion of the Council's report is that based on personal inspection of all the medical schools of the United States. The committee, therefore, suggests that the House of Delegates of the American Medical Association direct the Council on Medical Education to make an annual inspection of all of the medical schools of the United States for a period of three years to date from June 1, 1907.

### II.

The second of its functions, namely, the making of suggestions which shall lead to a gradual improvement in medical education, the Council on Medical Education has also fearlessly performed. The suggestions found in the report by your Reference Committee have been considered by its members, and the following have been singled out to be presented to the House of Delegates as the educational policy of the American Medical Association.

(1) The minimum educational standard for a medical school in good standing with the American Medical Association shall be:

(a) Evidence of a preliminary education sufficient to enable a student to enter the freshman class of a recognized university or college, this education being construed to mean either graduation from a four-year high school or an amount of training equal to that given in a four-year high school course.

(b) Four years of successful work in a medical school, each year to consist of at least thirty weeks of thirty hours per week of actual work in class, laboratory, dispensary and hospital.

(2) Although the American Medical Association continues to stand by the four-year high school course adopted at the Portland session as the *minimum* preliminary educational qualification for the study of medicine for the entire United States, at the same time this Association favors beyond present requirements, as soon as conditions warrant, the enlarge-



ment of preliminary scientific education to include a thorough course in physics, chemistry and biology, and also one modern language, preferably German.

(3) Medical schools conducted solely for profit shall not be in good standing with the American Medical Association.

(4) Night schools, meaning those schools giving all or the major portion of their instructions after 4 p. m. and before 10 p. m., shall not be in good standing with the American Medical Association.

### III.

The American Medical Association, through its House of Delegates, urges, both at the suggestion of its Council on Medical Education and of its Reference Committee on Education, the following:

(1) That state licensing boards be urged to make annual personal inspections of the medical schools located in their respective states.

(2) That state licensing boards be urged to award to no undergraduate a license to practice medicine.

(3) That the state licensing board of each state be urged to pass on the preliminary educational attainments of all those contemplating the study of medicine in that state, and to issue to each successful candidate a certificate entitling him to admission into any school located in that state choosing to receive that candidate.

(4) That the state licensing boards be urged to extend so far as possible the principle of reciprocity among themselves, the American Medical Association being heartily in favor of the rapid extension of the reciprocity principle.

### IV.

The Reference Committee further recommends to the House of Delegates of the American Medical Association that the plan of annual conferences on medical education adopted by the Council on Medical Education be endorsed, and that conferences similar to those hitherto held be annually conducted under the auspices of the American Medical Association, each state licensing board, and each state medical society being most cordially invited to appoint at least one delegate for such annual conferences, the conference further to have as members such others as it shall seem to the Council on Medical Education advisable or necessary to invite.

The reference committee desires further to state that it is of the opinion that the Council on Medical Education can not be too highly complimented for the work which they have accomplished during the past year. Indeed, the Reference Committee is of the opinion that a very hearty vote of thanks should be given that Council for its effective work, and that the Council on Education should feel that it has the hearty cooperation of the entire medical profession as represented by the American Medical Association.

CHARLES LOUIS MIX,  
STUART MCGUIRE,  
HENRY L. ELSNER,  
SOLOMON SOLIS-COHEN,  
F. B. LUND, Chairman.

The recommendations were adopted.

## Resolutions in Favor of Enlarging the High School Courses in the South Adopted.

Dr. Charles L. Mix, Illinois, offered the following resolution:

WHEREAS, In many of the southern states but few high schools exist, having a course extending beyond three years; and

WHEREAS, It is therefore a hardship for some of the southern medical schools to adopt a four-year high school course, or its equivalent, as a minimum of preliminary education for the study of medicine; therefore, be it

*Resolved*, That the American Medical Association lend its influence to the physicians of the southern states in their endeavor to secure an enlargement of the high school course from a three-year to a four-year course, and that the Council on Medical Education is hereby instructed to conduct active propaganda in the South with the above end in view.

Dr. L. C. Morris, Alabama, moved the adoption of the resolution, which motion was seconded and carried.

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## REPORT ON ADMISSION TO ADVANCED STANDING.

The following was read by Dr. John M. Dodson, chairman of the Special Committee on Admission of College Graduates to Advanced Standing in the Medical School, appointed by the Council:

### QUESTION FOR CONSIDERATION.

We understand the question submitted for consideration to be as follows: As the medical colleges now require for admission at least a diploma from a four-year high school, or a full equivalent therefore, and for graduation attendance on four annual sessions of at least seven months each, shall a student who possesses the bachelor's degree from a literary or scientific college (four years' course), and who has taken work in branches which constitute part of the medical curriculum, be given credit (a) for the medical work completed, or (b) for time; that is, be allowed to secure the medical degree after attendance on less than four annual sessions?

### HISTORY.

For many years certain literary and scientific colleges have offered courses in the medical branches which correspond closely to part of the required work in the medical curriculum. As early as 1876 such courses were offered at Cornell University, somewhat later at Yale, and in 1887 the University of Wisconsin announced a definite course in general science antecedent to the study of medicine.

Pursuant to the request of many medical schools numerous other colleges have provided instruction in chemistry, physics, biology, embryology, histology, bacteriology and a smaller number in physiology and human anatomy. Commencing about 1888 medical colleges have given credit for such work, and with few exceptions have permitted graduates of such literary and scientific colleges to enter the sophomore year of the medical course. In 1896 the medical practice act in New York was changed so as to preclude the granting of such advanced stand-

ing. This statute was amended in 1903, giving the board of regents the right to permit such practice under certain conditions.

In 1898 the statute in Minnesota was modified so as to require that every applicant for license should have spent four annual sessions in residence in a medical college. This statute was applied by the examining board of Minnesota to the individual and not to the college until November, 1904, when it was announced by that board that thereafter the diploma of any medical college granting such advanced standing would be refused recognition by the board.

Subsequently a similar ruling was made in Kentucky, in Michigan, in Iowa, and recently in a number of other states the medical boards have announced their intention to put in force a similar provision. As it stands at present, therefore, no medical college can grant advanced standing, in time, for work done in a literary or scientific college without subjecting its graduates to the rejection of their diplomas in several of the states.

The subject has been investigated and discussed very extensively during the last few years by the American Academy of Medicine, the Association of American Medical Colleges, and by several of the medical examining boards.

#### PRESENT STATUS.

*A. Attitude of the State Board of Medical Examiners.*—The following questions were sent, with a circular letter requesting answers, to all the examining boards in the United States:

1. Does your board recognize the diploma of a medical school granting advanced standing for work done in other than medical colleges, as entitling the holder thereof to examination for license to practice?

2. Where against advanced standing or time credits is your decision operative, against the college, or only against the individual to whom such credit has been allowed?

3. On what grounds does your board make its ruling for or against such advanced standing?

Replies were received from 37, which must be classified according to Question 1 under three heads:

First. Those having no authority, the question being decided by statute. The following 18 states are in this class: Maryland, Arizona, Georgia, Texas, Massachusetts, Mississippi, Missouri, West Virginia, Tennessee, Arkansas, Rhode Island, Utah, South Carolina, Oregon, New York, Colorado, Wyoming, Washington.

Second. Those boards recognizing a time credit advanced standing. The following 8 boards are in this class: Nevada, Indian Territory (three boards), New Hampshire, Connecticut, Illinois, Nebraska.

Third. Those boards which do not recognize a time credit

advanced standing. The following 11 boards are in this class: Michigan (applies ruling against college), Vermont (not stated), Iowa (against college), Indian Territory, Southern District (against individual), District of Columbia (against individual), California (against individual), Wisconsin (against college), Indiana, except where credit is fully equivalent to first-year course (against individual), Ohio (same as Indiana), Minnesota (against college), New Jersey (against individual).

*B. Practice of the Medical Colleges.*—Recent correspondence with the medical colleges of the United States, conducted by two members of the committee, results in the finding that of the 146 colleges from which replies were secured, 102 grant no advanced standing in time for work done in a literary or scientific college, but require that every student shall have attended four annual sessions in a medical college before he may become a candidate for graduation.

Forty-three medical schools continue to admit the holders of the bachelor's degree to the second year of the course, either (a) without restriction excepting that first-year branches which have not been covered are to be made up; or (b) on condition that the work in the scientific college has comprised certain specified branches which are usually included in the first year of the medical curriculum.

Several of these communications state that the former practice of granting such advanced standing has been abandoned only in order to comply with the rulings of the examining boards which are adverse thereto, and not because the faculty believes such ruling to be logical or wise. In other institutions the faculties are said to be in entire accord with the ruling which abolishes this practice.

It is proper in this connection to call attention to the fact that the ruling of any particular state medical examining board affects not simply the medical schools in that state but applies to every medical school whose graduates may seek a license to practice in that state. The effect of a ruling of a single state board is therefore far-reaching.

*C. The Attitude of the Literary and Scientific Colleges.*—The colleges of arts believe that some provision should be made by the medical authorities for examining the work done by them in pure science for which, under proper conditions of teaching and equipment, credit might reasonably be asked from medical schools. Some colleges are offering courses of this kind, and others are likely to do so. The total number of independent colleges (by which term is meant colleges without professional school affiliations) at present able to offer genuine medical work is small. The number will increase gradually, hence it will be a matter of no great difficulty to determine just what colleges that ask credit are doing, and what amount of credit they are entitled to have.

## RELATION OF LITERARY COLLEGE TO MEDICAL COLLEGE.

The college of arts without question should have the privilege, under suitable conditions, to articulate its work with that of the medical schools. There is a common ground between the college and the medical school where subjects are both cultural and medical. The college will continue to teach these subjects with increasing efficiency. For the work done they will continue to ask credit, until the medical schools decide to become true university schools, that is, require the bachelor's degree for admission; and until the universities give up their so-called combined courses. These two possibilities are remote. Meanwhile, the college is entitled to preserve in its integrity its full four-year course; and has, or ought to have, the same right in its own territory to provide for a reduction of time, if reduction is necessary, as the composite institution which we call the university.

It is fair to assume that a first-class college should be able to give instruction in the pure medical sciences at least as adequately as second-class medical schools. The colleges claim more than this. They believe that there is justice in their contention, and simply ask that their claims, based on work actually done, receive reasonable consideration. They ask for no favors or concessions of any sort.

The colleges believe that credit for work should be provided for by actual inspection, preceded by a written report from the college applying for consideration. This report should be made on a blank provided by the medical authorities, and should furnish data sufficient to determine whether the college is entitled to a special visit of inspection.

The decision, finally, should rest on the quality of the work done. If the colleges actually give courses that are deserving of credit they should receive credit. All that the colleges ask is a decision based on personal knowledge. It is not reasonable nor just, without actual knowledge, to declare that it is not possible for them to meet the requirements of the medical schools.

To carry out the suggestions here made, a board of inspectors should be provided, whose duty it should be to pass on the quality of the work already offered, and also to suggest courses suitable to be offered in colleges of arts; to define what should be the standard of such courses, what should be the quality and aim of the teaching, and under what conditions it should be done. In this way there would be formed a basis of cooperation, which would be productive of educational results quite as important for the medical school as for the college.

THE COMBINED COURSE FOR THE DEGREES OF A.B., B.S., OR PH.B.  
AND M.D.

Having an important bearing on the question under consideration is the practice in vogue in a large and increasing



number of universities with medical departments of offering a combined course in science and medicine of six or seven years beyond the high school, leading to a bachelor's degree and the degree of doctor in medicine.

In the large majority of these institutions the requirement for admission to the medical course proper is a high school diploma, but the longer course comprising two years of college study antecedent to the medical curriculum is advised. In four only are the two years of college work absolutely required as a prerequisite, viz., the University of California, the University of Minnesota, Western Reserve University, and Rush Medical College in affiliation with the University of Chicago.

In several the fundamental branches constitutes the curriculum of the first two years, is taught in the university proper, removed by some distance (in most cases many miles) from the college where the clinical branches are taught. Such is the arrangement at the University of California, the University of Texas, the University of Kansas, the University of Nebraska, the University of Chicago, the University of Indiana, the University of West Virginia, and the University of North Carolina.

In two other institutions the work of one or both of the first two years may be taken at the university proper; these are Cornell University and the University of Illinois.

In all of these institutions the conditions under which the first two years of the medical curriculum are given really differ from those obtaining in the detached literary or scientific colleges only, in that the whole instead of a portion only of the first two years' work is given, and second, that in the detached college the student does not matriculate as a *medical* student in an institution chartered as such.

#### ARGUMENT FOR ADVANCED STANDING.

It is argued by those who favor the granting of advanced standing in the medical school to the holders of the bachelor's degree, that:

1. There is great need in the medical profession for men of a broader, more thorough culture and training such as the college course affords; that the granting of one year of credit encourages prospective medical students to take the college work first, and by virtue of the mental power and grasp acquired in a college course, they can study the medical branches to better advantage, and advance more rapidly than the student without such training.

2. The best instruction in some of the medical branches, conspicuously in chemistry, physics, histology, embryology, biology, bacteriology (in some schools also gross anatomy and in physiology) is offered in some of the literary and scientific schools, and that good work should be recognized wherever it is accomplished.

3. The instruction in these branches given in the detached colleges is, in many cases at least, quite as thorough and effective as that given in the universities having medical departments, and much better than that given in many medical schools. The branches are taught by men who are devoting their whole time to teaching and research in their respective lines.

4. To recognize two years of medical work given in a university which chances to have a medical department, and to refuse recognition for work done in the detached colleges, to the extent of its actual value—be it one year or less—is to discriminate unjustly and illogically against the college.

#### THE ARGUMENT AGAINST.

The principal arguments of those who oppose the granting of advanced standing may be stated as follows:

1. No medical branches can be properly taught excepting by medical men and in a medical atmosphere, by which, presumptively, is meant the atmosphere of a school where clinical medicine is being taught.

2. While in some of the literary and scientific colleges those medical subjects which are offered are well and thoroughly taught, in others the instruction is very poor indeed. In other words, that there is a great inequality in the colleges, some demanding high requirements and giving most thorough instruction, while others are extremely lax in this respect. It is urged that no discrimination has been exercised by some of the medical schools in granting advanced standing, and that the boards of medical examiners have no means of determining the quality of these literary and scientific colleges, or, if they had, of compelling the medical schools to so discriminate.

#### THE ARGUMENTS EXAMINED.

As to the first argument it is perhaps sufficient to point out that the same objections obtain in reference to the first two years' curriculum of the university medical schools to which allusion has already been made, yet these have already been recognized by the state boards, and their practice appears to have become an established and approved custom. It may be further said that as between custom of having the fundamental branches, anatomy, physiology, etc., in the hands of medical practitioners (who are doing this work as an incidental diversion to general practice, and, to whom in many cases, the interests of the important branch assigned to them is quite secondary to that of a clinical chair appended thereto), and the teaching of those branches in a non-medical atmosphere by experts, the argument is surely, under present conditions, quite in favor of the latter alternative.

To the second argument there attaches much more weight. There can be little doubt that the custom of granting advanced standing has been very loosely exercised by some medical col-

leges. One of the members of the committee is cognizant of an institution, which at least until recently, admitted students substantially from the grammar school, granted the bachelor's degree in two sessions of fifty weeks each, and permitted the student in the same interval to take the course for, and to receive the degree of graduate in pharmacy. Yet the bachelor's degrees of this institution were recognized as good for a year of advanced standing in several medical schools. This looseness of practice by many of the medical schools in granting advanced standing to the graduates of good and poor schools alike, without discrimination as to the real work they have had, seems to your committee the one serious objection to the practice. Can this difficulty be obviated? Is it possible to devise a plan by which the boards of medical examiners can classify the literary and scientific colleges, specifying those from which credits may be accepted by the medical schools and forbidding the granting of advanced standing to graduates of unworthy colleges? We believe such a procedure to be feasible and advantageous; that it can be accomplished by the same methods that should be adopted in discriminating between medical colleges, classifying those which are recognized by the several boards.

It may here be pointed out, however, that no adequate basis for discrimination has, so far as we can learn, ever been put into operation by any state board. Mere inspection of the published announcements, catalogues or other publications of a college, and the current rumor as to its character, afford a totally inadequate basis for recognition. To be able justly to decide whether or not a medical college shall be "recognized," and its diplomas accepted as a prerequisite for licensure, a board must know by personal inspection of its members, or an authorized agent, something of the buildings, equipment, methods and character of the institution. This matter, in at least one instance, has been the subject of legal decision by the courts.

#### INSPECTION RECOMMENDED.

Your committee would, therefore, recommend that the Council on Medical Education take steps to secure the institution by the several medical examining boards of a system of thorough inspection and investigation of the medical schools of this country, the results of such investigation to be made the basis for recognition of the diplomas of these schools. The Council of Education, through carefully selected officials, might undertake this investigation, provided the boards would appoint these persons as their duly authorized agents for this purpose. Your committee recommends that the Council of Education offer to the state examining boards to undertake this work of inspection.

It is further recommended that this system of inspection be extended to include the literary and scientific colleges which

offer instruction in any of the medical branches and whose graduates make claim for advanced standing in the medical schools. That on the basis of the report of such investigators the medical examining boards be requested to classify these colleges, stating what medical subjects are adequately taught in each case, and advising as to the amount of credit which may be given to the graduates of each institution, for (a) work done, and (b) in time of required attendance in the medical college.

In the judgment of your committee such an arrangement would tend to promote a better understanding and a more effective cooperation between the medical schools and the institutions for general learning, an especial desideratum at the present time when one year of college work is soon to be demanded by many medical schools and by several state boards as a prerequisite for admission to medical study.

JOHN M. DODSON,  
J. H. T. MAIN,  
W. S. FULLERTON.

It was moved that the report be adopted. Seconded.

#### DISCUSSION.

DR. WILLIAM A. SPURGEON, Indiana:—I would like to ask Dr. Dodson if he can give the citation of the case in which the members of the examining board were required by the court to make an inspection of the institution referred to.

DR. DODSON:—This case occurred in Wisconsin. About three years ago the State Board of Wisconsin refused to admit a young man to examination for licensure, because he possessed a diploma from one of the Chicago night schools. A curious decision was rendered by the court. The attorney for the plaintiff, who sued for mandamus against the board, set up in his plea that the board was basing its decision on inadequate information. They had never seen the school, he said, and did not know anything about it; that the school had as good an equipment as any other school. The court therefore instructed the board to investigate this school, and if, after personal investigation, they were justified in refusing it recognition, they could withhold the permission, but otherwise the mandamus would hold, and the board came down here post haste and investigated this school.

DR. SPURGEON:—Have you the title of the case?

DR. DODSON:—I have not. I think Dr. Curren, a former president of the Wisconsin State Board, can give the facts.

DR. W. T. SARLES, Wisconsin:—I wish to say that an investigation was first made, and the court ruled that the investigation was not sufficient; that time enough was not spent in attending the lectures and in examining the equipment. We then ordered a committee to investigate and re-report. On re-reporting, the court decided in our favor. The last Wisconsin legislature gave full power to the board of saying what is a reputable school, and on that basis we got a decision.

DR. S. L. JEPSON, West Virginia:—I believe the committee recommended in its report that a commission be appointed to



investigate certain institutions. There are two institutions of a literary character in which I am somewhat interested. The University of West Virginia has a medical course of two years, and we have a contract with some of the Baltimore medical schools whereby those two years shall be recognized. I am trustee of the Washington and Jefferson College, which has a pre-medical course, and I think we have an arrangement with the West Pennsylvania Medical College. I have doubted the advisability of recognizing these, especially where the teaching is done in a separate city. I think the recommendation of the committee should be adopted, and that this pre-medical course should not be recognized until after an investigation has been made and reported on favorably. I have not been favorably impressed with the fact that they give the same class of teaching that is given in the medical schools, and I think the recommendation of the committee is an important one.

DR. WILLIAM H. WATHEN, Kentucky:—If we are ever to arrive at any practical conclusion as to giving advanced standing for work done outside of the medical course, or for a bachelor's degree, it must be as a result of the united action of the state examining boards of the country. It would be better, it seems to me, to refer the whole question that has been discussed by this committee to the state examining boards of this country; and these examinations should be made through these boards to make them effective in all states. I move that the report of this committee, read by Dr. Dodson, be referred to the national examining boards for the purpose of investigating and reporting and deciding just what standing, if any, shall be given for a bachelor's degree, or for work done outside of a regular medical college.

Seconded by Dr. Means.

THE CHAIRMAN:—There is no organization which includes all the examining boards in its membership. One of the most desirable things that could happen would be a strong organization which represented every state examining board. But that is difficult of accomplishment. I think the same thing can be accomplished, as you suggest, by placing the responsibility, which, I understand, the report suggests, on the state boards. That, of course, can be done.

DR. W. S. FULLERTON, Minnesota:—I am a member of this committee; therefore, I do not wish to second the motion that has been made to adopt this report, or to support it. Before this matter can be referred to the examining boards of the country, it seems to me, that there should be something definite for them to act on, and that something definite is just this matter which, I understand came to us as an offer from the Council on Medical Education, that it would furnish the inspecting end of this work. Then it comes before the state examining boards to adopt these inspectors as an official part of their machinery. Minnesota has already endorsed that movement officially, so that we are in a position to accept the work done by this investigating committee as our own investigation. This committee is made a part of our official board; it is our inspecting bureau, and we are on record as adopting that. I would like to see this matter brought before the different



state examining boards and have them take such action as we have taken.

DR. WILLIAM A. SPURGEON, Indiana:—This is one of the perplexing questions we have to meet in connection with the work of the state medical examining boards. While the work of this Council is important and the various boards throughout the country are watching its work with interest, yet it must not be forgotten that this Council is possessed of no legal authority, and that its work is advisory. The motion made by Dr. Wathen a moment ago that this report be referred to the national medical examining boards, or to the American Confederation of Examining Boards, is open to the same objection, that no national organization of medical examining boards has any sort of authority. Its work is advisory only. The authority to act is vested in each separate state medical examining board, and there comes the perplexing question in connection with the solution of our problem—is it to be referred back to these boards? We should keep in mind that those who are members of examining boards should be particular just now because we occupy a peculiar relation. Those of us who are in this Council by direction of the governors of our states, and who are members of state medical examining boards, have no right to bind our boards by our action here. We can not do it, so that we are occupying a rather peculiar position. If we vote to adopt this report, then we may be in a way regarded as binding the boards we represent, which I have said we can not do. It makes it rather embarrassing for us to vote on the question because of that peculiar relationship.

DR. W. S. FULLERTON, Minnesota:—I do not wish for one moment to entertain the idea that the action of this body would bind the individual state boards. Each state board is an entity, acting by itself. I only wish to repeat that Minnesota has taken action endorsing this plan and is willing, when this report has been sent to it, to act on that report. That is as far as we can go.

THE CHAIRMAN:—Probably Dr. Spurgeon was not here when the chairman read his report. I said we were not a legal body; that the state medical examining board is properly and always will remain the body in control of medical education in its particular state, and Dr. Spurgeon is right in saying that whatever we do here is simply in an advisory capacity. I wish to throw out this thought, however, that what the men, who are here to-day representing medical colleges and state boards and the profession generally, determine on carrying out, if it is broad and correct in principle, will undoubtedly eventually be carried out by the state boards. All we can do with such a report as this is to suggest to your respective state boards that this report is possibly a solution of this question. Of course, it will take time to work it out.

DR. H. W. ORR, Nebraska:—It is obvious that what this conference and Council are accomplishing is not beyond what they may accomplish to some extent, and I am strongly in favor of proper credit being given by medical colleges for work previously done. I think the recommendations of the committee are important and should be fulfilled, if possible. I therefore think it would be expedient to appoint a committee from this

conference to pursue the same line of investigation regarding pre-medical work done by the medical colleges themselves or by other schools.

DR. B. F. BAILEY, Nebraska:—I believe it is an admitted fact that the work of this Council is only advisory and that it has no legal authority. The same is true of the American Confederation of Reciprocating Boards; but although they have no authority, they have power. Therefore I am heartily in favor of Dr. Wathen's motion.

DR. J. W. BENNETT, New Jersey:—The medical laws of some of the states, for instance, New Jersey, would not permit us to delegate the inspection of these schools to other than members of our own board. Evidently the laws of Wisconsin are of the same nature from the report of the case that has been cited. Indiana, I understand, is the same. That is one thing we will have to bear in mind.

DR. A. RAVOGLI, Ohio:—The Ohio State Board now recognizes one year of advanced standing of any one who has in a literary college covered all the sciences which are taught in the first year of a medical college; and the board of preliminary examinations gives an exact report of the work which is done in these literary colleges, and if it is acceptable, it serves as a substitute for what is done in medical colleges.

DR. W. J. MEANS, Ohio:—This conference can do nothing less than adopt this report, and when it is once adopted as the sentiment of this conference, then we can dispose of it in the direction we wish. I understand that these organizations are largely advisory, the same as this Council; they are not legal bodies, and unless we have something that is crystallized to present to these state boards, where there is legal authority, we might as well not meet. Therefore, I move that the report now be adopted, as the sense of this conference, and then we can dispose of it afterward in the direction we choose.

This motion was seconded and carried and the report declared adopted.

A MEMBER:—I suggest that the report be referred to the presidents of the various state boards, with the request that they bring the matter before their respective boards.

THE CHAIRMAN:—We have another important committee to hear from before we adjourn, namely, the Committee to Consider Details as to the Requirement, in Addition to a Four-Year High-School Education, of a Year to be Devoted to Physics, Chemistry, Biology and One Language, as a Prerequisite to the Study of Medicine. This report will be presented by Dr. John H. Long.

DR. LONG presented the report as follows:

#### REPORT OF THE SPECIAL COMMITTEE ON PRELIMINARY MEDICAL EDUCATION.

The Committee on Preliminary Education in Sciences and Languages, appointed last winter by the Council on Medical Education, has undertaken to secure information on certain points from which conclusions pertinent to the present inquiry may be drawn. Some time before the appointment of this committee, consisting of Professors Long, Bardeen and Pier-

sol, the Council made a direct effort, through correspondence with a number of the more prominent universities and colleges of the country, to discover the amount of work which should be considered as a year's equivalent in the several topics, and how much of this work in sciences and languages could be completed in a single year at the various institutions addressed. In other words, it was sought to learn how far the usual, or an elective, freshman course would go toward satisfying the requirement of the Council with reference to this preliminary year.

The replies received by the secretary, Dr. Colwell, were far from satisfactory; in fact, in many cases they were very misleading and gave no clear idea of what the universities could do in the matter which would be of value in helping on with the plans of the Council and the medical schools interested in the proposition of raising the standard of work in medical education. It was even evident that in some of the answers the university and college authorities had dodged the issue.

With these facts in view our committee decided to ask for more definite information, and in such a way as to leave no loophole for misunderstanding. Accordingly, the following circular was printed and sent to all the colleges, universities and technical schools listed in the last report of the Commissioner of Education. There are about 500 names in the list, and the circular letter was sent out in February last.

#### THE CIRCULAR LETTER.

"CHICAGO, Feb. 25, 1907.

"*Dear Sir:*—Because of the rapid advances made in medical science in the last ten years it is becoming necessary to greatly increase the work given to students of medicine to enable them to take advantage of the modern points of view and follow understandingly the many valuable recent discoveries. It is not possible to increase the work within the limits of the four-year courses as now given in our best schools of medicine, as these courses are already overcrowded. On the other hand, it does not appear to be at present possible to lengthen these courses to five years, as has been sometimes suggested. The only remaining alternative is to require of students beginning the study of medicine a broader preliminary training than is usually called for from young men or women entering the medical school. This training should embrace some of the work now given in the medical school in the first or freshman year, with certain subjects in addition, and may be outlined as follows:

- "1. A year's work in general biology.
- "2. A year's work in chemistry.
- "3. A year's work in physics.
- "4. A year's work in a modern language, preferably German.

"All of this work is supposed to be of the grade given in the freshman or later years of our best colleges. It may be and should be preceded by elementary high school work in the same subjects, especially in the languages. It is understood that a

year's work which may be counted toward the bachelor's degree, is the equivalent of four recitations or lectures a week in each of four subjects through the usual nine months' course.

"The following statement may make clearer what is understood by a year of college work in the several subjects:

*"Biology.*—The course here should include lectures or recitations, and laboratory exercises amounting to about six hours of work a week through one college year. In the laboratory the following types, or their equivalents, should be studied: (a), a protozoon (a ciliate and ameba); (b), a celenterate (hydroid, hydra or sea-anemone); (c), an annelid (earth-worm); (d), an arthropod (preferably a decapod); (e), a vertebrate (preferably a frog or fish), with a view of a general comparison of the plan and internal structure with that of the human body. When possible a study of tissues should be made, first with the unaided eye and then with the microscope, to demonstrate the relation of cells to intercellular substance, as in epithelium and connective tissue. It is desirable that the student should study other fresh typical specimens of elementary tissues, as muscle, nerve and blood.

"If the college work in biology is wholly or largely of a zoologic character, as outlined above, it is desirable that it should have been preceded by some work in botany in the high school.

*"Chemistry.*—The student entering the medical school should have completed a substantial course in general inorganic chemistry, with experiments, elementary qualitative analysis, an outline, at least, of volumetric analysis, including the theory of the fundamental processes, and finally, a short course in organic chemistry sufficient to serve as an introduction to physiologic chemistry. All this work in chemistry should consume, at least, about ten hours of recitation and laboratory work per week through a year.

"Inasmuch, however, as few freshman courses cover as much ground as is here indicated, the work in general inorganic chemistry, with laboratory experiments and qualitative analysis, may be taken at present as the minimum amount which would satisfy the needs of the medical schools under the new requirement.

*"Physics.*—This college work is supposed to be preceded by an elementary or preparatory course in the high school or academy. The subjects here of the greatest importance for the study of medicine are heat, light and electricity. Satisfactory work in these branches should cover probably three recitation hours and five or six laboratory hours through a college year. The student should acquire some practical knowledge of the microscope, the spectroscope, of thermometry and specific heat, and some familiarity with simple electric measurements.

*"Languages.*—In addition to the work of the high school or academy in these subjects the student should have enough college training to enable him to read one foreign language, preferably German or French, with some degree of ease.

"Up to the present time most of our medical schools have drawn their students from the graduates of the high schools. A few medical schools have required college graduation for entrance, but it is recognized that this relation is not yet, in



general, realizable. It is hoped, however, that in order to meet the urgent demand for better preliminary education now being made by the leading schools of medicine, the colleges of the country will be prepared to furnish in the first years of their courses to prospective medical students such a curriculum as is outlined above.

"This letter is sent out by a committee of the Council on Medical Education of the American Medical Association in an effort to discover just what the colleges of the country can do for the instruction of this class of students who usually do not enter college at all, but who now, under the press of changing conditions, must do some college work before being considered properly prepared to enter upon the study of medicine.

"Will you kindly answer the following questions:

"How much of the work outlined above is your institution prepared to give in *one year* to students who have a high school training?

"How much of this work can you give in *a year and a half*, that is to the middle of the sophomore year, to students equipped in the same way as above?

"If not at present able to furnish the courses in the specified time, can you, in view of the apparent demand, give such courses beginning with the college year 1908-9?

"The point to be kept in mind is that the college should be able to furnish this desired instruction within a period corresponding to the freshman and perhaps a part of the sophomore year. A blank is enclosed for a reply, which will be greatly appreciated, as will also any comments or suggestions which you may make.

"In presenting its report the committee desires to prepare for publication a list of those colleges which are or will be able to offer courses substantially like those outlined above.

"Yours truly,

"C. R. BARDEEN,

"G. A. PERSOL,

"J. H. LONG,

"Committee."

The phrase "preliminary year in biology, chemistry, physics and languages" is somewhat vague, and your committee, after much discussion, undertook to define it to some extent, as appears in the wording of the circular letter. To be of real value the courses taken in a preliminary year should make it possible for the student to begin a higher grade of work immediately after entering the medical school. At the present time most of our medical schools teach the elements of biology, chemistry and physics, and it is probably no exaggeration to say that two-thirds of the time of the medical freshman is taken up with work which may be, or in fact, should be done elsewhere, and better, too.

It was this consideration which led your committee to outline in a general way what should be covered in the several preliminary courses. It will be seen that the suggested exercises in biology cover work which would serve as a beginning



in histology and physiology as well as in comparative anatomy; the chemistry work would cover that given in our usual medical freshman year, while the courses in physics would take the place of work now given in a perfunctory way in many of our medical schools, but which is becoming every year more and more necessary as the many relations of this fundamental science to medicine become more and more tangible.

#### THE ENCLOSED BLANK.

#### REPLY TO CIRCULAR LETTER ON PRELIMINARY MEDICAL EDUCATION.

Name of Institution.....

Location .....

This institution is prepared, or will be prepared, to furnish class work or laboratory instruction to Freshman students in Biology, Chemistry, Physics and one foreign language, preferably German or French, of a character corresponding to that described in the accompanying circular letter, and within the time specified, as shown in the table below. Work which can not be done in the Freshman year may be done as explained under "Comments."

#### NUMBER OF HOURS GIVEN EACH WEEK THROUGH THE FRESHMAN YEAR.

	GIVEN AT PRESENT.		TO BE GIVEN BY 1908-09.	
	LECTURE OR CLASS.	LABORA- TORY.	LECTURE OR CLASS.	LABORA- TORY.
Biology .....	.....	.....	.....	.....
Chemistry .....	.....	.....	.....	.....
Physics .....	.....	.....	.....	.....
Language .....	.....	.....	.....	.....
Signed.....				
Comments:				

#### NEW CLASSIFICATIONS NEEDED.

A modern German classification divides physiology into the two groups of studies comprised under the titles of biochemistry on the one hand, and bio-physics on the other. A glance through any one of the larger manuals of physiology in use in our medical schools discloses a justification of this division, and suggests also the desirability of relegating much matter from the class-room in physiology to the class-room in physics. Besides this, it is becoming evident that modern pathology is making every day wider inroads not only into the fields of chemistry, but also into the domain of physics, and taking all things together, the committee felt that it was not going too far in calling for the amount of physics suggested in the circular letter. No explanation of any length

was made in reference to the language work, as little difficulty from this direction was expected.

#### RESULTS OBTAINED.

Now as to the results. The replies received were 215, of which the larger number were plain and satisfactory; a few were not as clear as might be desired, from which it follows that a perfectly sharp classification can not be made from the data secured. But the results are close enough for the present purpose. Sixteen of the answers came from state universities, 8 from agricultural and technical schools, and 191 from other institutions, some of which include the best known colleges and universities in the country. The replies from 15 of the state universities and from 7 of the agricultural and technical schools showed a good general agreement with our proposed courses of study. The replies from 78 other institutions were also favorable, although it appears likely in a few cases that the schools in question have not the facilities for properly doing the work called for, as will appear from an inspection of the lists given below. On the other hand, about 30 well-known institutions made replies which could not be looked on as wholly favorable.

The situation in some of the older schools seems to be best expressed by the comments made by President Hadley of Yale, as follows: "The demand for places in our undergraduate courses is so far in excess of what we can readily meet that we can hardly arrange to take men for one year, with a view of letting them leave us at the end of that time. We must, I think, arrange our courses for men who expect to stay longer." In this list along with Yale we must place Cornell, Princeton, Trinity, Williams, Lafayette, Union, Tufts, Vanderbilt, Bowdoin, Oberlin, Hamilton, Syracuse and others of known rank. It is evident that the schemes of instruction in these schools are not flexible enough to allow a freshman to elect as large an amount of work as our committee suggested. The greatest difficulty seems to be with the work in physics, which naturally presupposes some acquaintance with trigonometry, and which in consequence is usually thrown over to the sophomore year. The work in chemistry, biology and languages could in most cases be provided for.

#### HOSTILITY TO THE PLAN.

The replies from about 80 institutions gave evidence of lack of interest in the matter, lack of equipment for the work, or, finally, a distinct hostility to the plan. As illustrating the last situation the answers from two small colleges, one in Pennsylvania and one in Illinois, may be quoted. The first reads as follows:

In reply to your letter I would say that we can not justly give the course you suggest in less than two years, except in rare cases. We have found, in our experience, that the students who took a full B.S. course received the best results. We even discourage the short two years' course, because it has so little of

general culture work, and the American College stands for culture. If professions will continue to admit men on purely technical preparation and disregard the college, the college nevertheless must stand for the ideals that have made it. Your suggested one-year course is unpractical. You require so much laboratory work in chemistry and physics that none but the exceptional freshman can take them. The number of hours of your proposed course outnumber the hours which educators, knowing the capacity of the human brain and mind, have fixed as a maximum. Should your plan obtain the work must be superficial. For some time we college men have watched the plans of the medical profession and we are astonished that there is so little appreciation of sound pedagogics.

From the president of the Illinois school the following reply came:

In response to your inquiry concerning our work in science relative to its value for medical education, permit me to say that we offer all and more than you require, but not in the freshman year. We carry science study through four years of the college course. It appears to us on careful consideration that what you require as preliminary to the medical course could not be well crowded into one year. Three different lines of science study with extended laboratory practice is more than students can advantageously carry in one year, not to speak of the addition of a modern language. Certainly, such crowding could hardly meet the requirements of a good college course. Besides, freshmen are not qualified for the more advanced work in the sciences. Moreover, it seems hardly fair to us that colleges should be asked to do such hurried preparatory work for the professional schools. Why might not law and theology come with similar requests? In what manner could any college do justice to its students under such pressure? Would it not be perfectly fair for the professional schools to adjust their courses to the needs of college graduates? That would certainly greatly improve professional efficiency. We are quite ready to maintain such courses as the professional schools can recognize; but we can not see our way clear to comply with the requests of your letter of inquiry.

It is evident that these men do not fully understand the situation and in addition that their answers are dictated by a somewhat natural self-interest; but in the opinions of other men better able to appreciate our position, we have noticed a similar doubt as to the wisdom of attempting so much work in a single year. In this connection there are two questions to consider: first, the practical one of arranging hours to avoid a conflict of studies, and yet present all the work suggested to be taken, and, second, the possibility of carrying this number of hours successfully. In actual time the scheme provides for about 25 hours of work each week through the college year, divided between class-room and laboratory and omitting organic chemistry. Now allowing for a reasonable division of time in the work in the sciences, this is not more than a fair student should be expected to carry, and not more than students carry well in many of our best schools. It must be admitted that students who are expected to devote a good fraction of their time to athletics and fraternity interests can not carry such courses, but we are far from believing that the present tendency in these matters in some of our schools is a desirable one or one which may be expected to persist.

## COMPLETE COURSE IDEAL BUT NOT PRACTICABLE.

It goes without saying that a college course of four years would give a prospective medical student a much better groundwork than the one we are talking about, but we are concerned with the practical question of what we can get rather than with what we should like to have. The members of your committee recognize fully the value of college training as an introduction to medicine, but we must keep in mind what is actually practicable under the conditions which obtain in the United States. Now while we recognize that it is hardly likely that any very large number of our medical schools are prepared to make a requirement of two years of college work for entrance, it is probably true that the best of them will be ready to ask for one solid year of work as a prerequisite. We are called on to determine if the facilities are available, and the answer must be read from the replies to our letter. While the favorable answers are not as numerous as we could wish, there are still enough to indicate that when the preliminary year is actually decided on the facilities for securing the desired work will be forthcoming. A mistaken self-interest seems to deter some of the colleges from giving a favorable answer to our questions. It is evident that some of them are afraid they might lose a few students, who might otherwise stay longer, by offering courses which would lead to the medical school at the end of one year. We see the force of this, but, on the other hand, an increased number of freshman students would be taken in, and some of these in turn might choose to remain with the college. There would thus be compensation.

The situation in the southern states is the worst as far as facilities for preliminary work in the fields discussed is concerned, but in all other sections of the country there are several colleges in each state which seem to be ready and willing to give such courses. If attention is called to these through the pages of *THE JOURNAL* other institutions may be induced to fall into line and offer the desired work. On the whole, we consider the outlook a favorable one, and feel that enough support is in sight to warrant the schools of medicine in asking for the preliminary year of college work.

But in many of the colleges, for some time to come, it is likely that the prospective medical student will have to spend a year and a half or two years to get the desired training. Several college officials in replying to our letter state that the high schools do not send out their graduates with sufficient preparation in the first elements of the sciences to enable them to make rapid progress in the college science work. This is probably true.

Whatever the explanation of the difficulty is the preliminary college year must mean more than a year of actual work in many cases. But we believe the medical schools should



stand rigidly for that, and insist on this amount of work whatever time it may take.

#### COLLEGES FAVORABLE.

Below is the list of the colleges which sent favorable replies to our circular. Many of the colleges addressed sent no replies at all, but these are mostly institutions, from which in reality but little could be expected. The list of the Commissioner of Education includes many "universities" which are but little better than academies. On the whole, a very fair proportion of answers were received.

#### STATE UNIVERSITIES.

Illinois.	Missouri.	Oklahoma.
Iowa.	Montana.	Oregon.
Kansas.	Nebraska.	Virginia.
Maine.	North Carolina.	Wisconsin.
Michigan.	North Dakota.	Wyoming.

#### TECHNICAL SCHOOLS.

Agricultural College of Utah.  
 Agricultural and Mechanical College of North Carolina.  
 Agricultural College of Connecticut.  
 Massachusetts Institute of Technology.  
 Rensselaer Polytechnic Institute.  
 School of Mines of South Dakota, Rapid City.  
 Throop Polytechnic Institute.

#### OTHER COLLEGIATE INSTITUTIONS.

Alfred University.	Buena Vista College.
Catholic University of America.	Center College.
Chicago University.	Clarksburg College.
Cincinnati University.	Coe College.
Colgate University.	Dickinson College.
Colorado University.	Earlham College.
Columbia University.	Emporia College.
Cotner University.	Fairmont College.
De Pauw University.	Geneva College.
Drake University.	Greenville College.
James Millikin University.	Hedding College.
Johns Hopkins University.	Hillsdale College.
Lawrence University.	Hobart College.
Lehigh University.	Huron College.
New York University.	Illinois College.
Northwestern University.	Kenyon College.
Notre Dame University.	Lake Forest College.
Ohio University.	Lenox College.
Ohio Wesleyan University.	Macalister College.
Pennsylvania University.	Marietta College.
Purdue University.	McKendree College.
Rochester University.	Milton College.
Stanford University.	Olivet College.
Susquehanna University.	Ouachita College.
Virginia Union University.	Parker College.
Washington University.	Penn College.
Washington and Lee University.	Philomath College.
Western University of Pennsylvania.	Randolph Macon College.
Wooster University.	Richmond College.
Adelphi College.	Ripon College.
Adrian College.	Rockford College.
Amherst College.	Simpson College.
Augustana College.	State College of Washington.
Beaver College.	St. Johns College.
Berea College.	Union College (Nebraska).
Bethany College.	Ursinus College.
Blackburn College.	Wabash College.
Bridgewater College.	Whitworth College.
Brigham Young College.	Woman's College of Baltimore.



The following named larger institutions do not appear to be able to arrange for all the courses as outlined. The smaller colleges which sent replies to our circular letter; but which for various reasons can not offer the desired courses, are not listed here.

Alabama State University.  
Bowdoin College.  
Bryn Mawr College.  
Buchtel College.  
Carleton College.  
Cornell University.  
Dennison University.  
Florida State University.  
Hamilton College.  
Hampden Sidney College.  
Iowa College.  
Lafayette College.  
Oberlin College.  
Princeton University.

Rose Polytechnic Institute.  
Smith College.  
Stevens Institute of Technology.  
Syracuse University.  
Trinity College.  
Tufts College.  
Union College.  
Vanderbilt University.  
Vassar College.  
Wellesley College.  
Wells College.  
Williams College.  
Worcester Polytechnic Institute.  
Yale University.

CHARLES R. BARDEEN,  
G. A. PIERSOL,  
J. H. LONG,

*Committee.*

THE CHAIRMAN:—I think the thanks of the conference are due this committee for the splendid piece of work they have done. They undertook an enormous task, one which required a great deal of time. What will you do with the report?

DR. VICTOR C. VAUGHAN, Michigan:—I move that the report be received with approval.

DR. WATHEN:—I second the motion.

DR. B. D. MYERS, Indiana:—As a suggestion toward solving this question, it seems to me it would be feasible, instead of requiring four years' Latin in high school work, as required for entrance, two years of Latin and two years of German should be required by the colleges, giving three subjects during each year, and one year in physics, chemistry and biology.

PROF. THOMAS F. HOLGATE, Evanston:—I think the question raised by the gentleman who has just taken his seat is rather pertinent, so far as the colleges are concerned. The requirement of the medical council of this interim year is a very important one, so far as the colleges are concerned, but it does not affect the colleges for the great majority of students; it only affects those students who come into college with their minds fully made up as to the study of medicine. A young man coming into college with his mind made up to study medicine can shape his course so as to meet this preliminary year in one year or in two years, as may fit the conditions of his college. I think there are very few of the colleges in the country where it will be made possible for a man to carry these four studies, as outlined in the report, in one year. I think if the answers are carefully scrutinized it will be understood from them that a college would offer no objection to a man doing this, and the curriculum is sufficiently flexible to meet it, but it is doubtful if it is possible for a college student to so arrange his program as to actually carry the work out in the one year. If the medical council will prescribe its four-year course, and then will put below it a preliminary year, which is defined in

the terms of the committee's report, that to be superimposed on a four-year high school course, then it seems to me as feasible, and a man may have to take two years in his college to meet the requirements of this preliminary year. The possibility of putting in twenty-five hours of work in one year for the ordinary freshman of 17, 18 or 19 years of age is a difficult one. It is not easily handled.

THE CHAIRMAN:—How would it be if German were left out and simply biology and physics given?

PROFESSOR HOLGATE:—The question of German is not determined, nor has the last speaker indicated that the work may be done in a high school. A man may go to college with a fair reading knowledge of French or German, and at the end not figure in the year's course at all. If the medical council would prescribe that the student must enter a medical college with certain specific preliminary requirements—in other words, he must enter after graduation from a high school, showing a certificate that he has included certain specific studies, some of which perhaps he can not get in a high school, but will have to get in college. The ordinary graduate from a high school presents fifteen units of credit. If the medical college demands twenty units, and includes in that twenty, four units of the subjects here suggested, the extra four units will have to come from the colleges, and it will take one or two years more to show the need to secure these units. It would be well to show clearly what subjects should be included in the unit of physics, of chemistry, etc., so that the medical schools can at once build on these units, knowing that the student has covered certain topics. To say that a student has a year of chemistry may mean one thing; to say that he has a year of biology in a college means practically nothing, the way the work is carried on throughout the country. If the medical schools will define their units, as the report indicates, say in chemistry or biology, which a man may get in one year, then it will be all right.

THE CHAIRMAN:—Possibly a short explanation is in order at this time. In Great Britain, where they have a five-year medical course, the first year of the course is devoted to chemistry, physics and biology. These can be taken in a medical school or in a school of liberal arts. In France, Germany and Austria, where a five-year course is required, the first year of that five-year medical course is devoted to chemistry, physics and biology. The object in this country is to raise standards as soon as possible, to those of the other great powers. At present we are very much behind, and it has been the object of the committee to see how this can be worked out, and I am sure the members of the committee will be glad to have any suggestions that may be made by any delegate. I should like to see this committee continue, if they are willing to continue their work, during the coming year.

DR. GEORGE H. PRICE, Tennessee:—It is very evident from the report which has been read here this morning that something is wrong. Medical institutions have been reported as having been given twenty or even greater percentages of failures before state examining boards. It means that the medical colleges have not required their students on entrance to come up to the published requirements, or that these require-

ments have been enforced in a perfunctory way. However, if to a four years' medical course in all institutions throughout the country, with a minimum fixed preliminary requirement of a four years' high school education, we add on another one or two years, as has been indicated by the report of the committee, it will put beyond the reach of a large number of young men the possibility of entering medical colleges at all. I do not know how it is in all sections of the country, but I know how it is with us. A large number of men have made their own way; have passed through high school and have made enough money to attend a medical college. Now, if we impose on such men an additional one year in some recognized institution, we may work a hardship.

DR. WILLIAM H. WATHEN, Kentucky:—From what has been said to-day, two-thirds, at least, of the colleges deemed worthy of recognition at this time can not practically comply with this so-called preliminary biologic course and exist. Of course, it is commendable in large universities to urge this, for the reason that it has been the fashion of late years for the academic department to recognize the work of the medical department. I think we should move slowly in this matter, and if we should adopt this and the state boards should enforce it, as outlined to-day, it will simply put out of existence three-fourths of the medical colleges of the United States.

DR. VICTOR C. VAUGHAN, Michigan:—According to the report made by the secretary, about forty-five medical schools have decided of themselves, without any special pressure from this Council or anybody else, to have from one to two years of college work before they admit to a medical college. The duty of this committee (and the members have done their work admirably) was simply to point out what should be included in the preliminary years. We are not trying necessarily to force the colleges to adopt one or two years, or anything of that kind. Forty-five colleges have decided that after 1910 they will require from one to three years. This committee was asked to pick out what subjects should be taught, and they have done so, and what they believe to be necessary to the proper teaching of modern medicine; it matters not whether it takes one or two years to get it.

High schools differ very much in the kind of courses they give, as well as in the thoroughness of the courses they give. In Michigan, for instance, a student can get an excellent reading knowledge of either French or German in his high school course, and he can take two years or three years of French or German if he wants to. If he did that he would not need to take extra French. Two years in a high school is as good as one in a university, and sometimes is as good as two in a university. I think there has been a misunderstanding. The idea on part of the committee was to point out the things necessary for the study of medicine.

I want to impress one other thing, namely, you can not teach modern medicine to a man who has not had these preliminaries. (Applause.) You can not teach the use of the microscope, the use of the ophthalmoscope and all these things to a man who knows nothing about physics. You can not teach physics to a man who does not know trigonometry. There is

not a thing mentioned in the report that is not absolutely necessary for a man who is going to get the best out of medicine. He must know his chemistry, otherwise he can not build on rock; he is building on sand, and the reason why we have had so much quack medicine forced on us is largely because we do not know anything about chemistry. Was it necessary for Sollmann to report that alcoholic solutions of pepsin were no good? Any freshman student who knows his chemistry knows that alcohol destroys ferment.

I think the report of the committee was excellent. They are only urging that twenty-five hours be taken in the proposed college course, so you can arrange the course at five hours a week or less. Those subjects should be taught to every student.

DR. JOHN M. DODSON, Chicago:—I should like to make a plea for the young men. This is hardly pertinent to the report of the committee, but nevertheless it has a bearing on what has been said. It seems to me that we do not need to make a plea for the young men who are unfitted to enter medical colleges. What we need to do is to look after those medical colleges who are accepting young men that are unfit to enter medicine. These medical colleges are committing a crime, in my judgment, in permitting such men to enter. My sympathies go out to the young man who has gone into medicine in that way ignorantly, inadvisedly, who will wake up in four or five years to the fact that he is handicapped in the race; that he has entered a profession for which he is unfitted and can not make a living at it, and when he wakes up to that fact he is in much more serious straits than the members of any other profession. His time, money and best years of his life have been spent in a medical college, and he is not prepared to meet the exacting demands of the profession which he has entered. The lawyer can turn his attention to commercial pursuits and make a good income in doing commercial work. The minister can utilize the training he has received, but the medical man can not do that, unless he has been adequately prepared. Suppose twenty or thirty medical colleges should go out of existence through consolidation or because of increased requirements, would it hurt anybody except a few individual interests that are involved? We do not need 160 medical colleges in the United States. If we have 44 or 50 we shall have a great abundance to do the right kind of work, in my judgment.

DR. GEORGE H. PRICE, Tennessee:—There seems to be a slight misunderstanding of my attitude in regard to this matter. I am firmly convinced in my own mind that a good preliminary education is one of the essentials to the study of medicine. But if you have these colleges live up to that, it is all right; if they do not live up to it, it will be all wrong. The point I want to make is this: If we put on five years now to the medical course, it will not be a great while before we put on more. The time will come when only those institutions which have an academic department, in addition to the medical department, can be recognized as giving the necessary training.

THE CHAIRMAN:—I would like to entertain a motion that this committee be continued and instructed to bring in a further report next year. I think it is important to have a further report if this committee is willing to do so.



DR. B. D. MYERS, Indiana:—I move that the committee be continued and instructed to report at the next annual conference.

Seconded and carried.

### EDUCATION IN THE SOUTH.

THE CHAIRMAN:—We are very fortunate in having with us this afternoon Chancellor Kirkland of the University of Nashville, who has consented to discuss the subject, "Conditions Controlling General and Medical Education in the South," a subject which is, when we consider the subject of medical education in this country as a whole, one of the most interesting yet most difficult problems with which we have to deal.

CHANCELLOR KIRKLAND said: I apologize for appearing before this body with rather crude and ill-arranged remarks. I accepted a place on the program only a few days ago, and have been on the road since my acceptance, and have had no time to prepare a paper such as I would consider worthy of this gathering. I must ask your kind indulgence for discussing so important a subject in a way perhaps a little offhand. Not being a medical man, I also feel a little hesitation when I come to touch preliminary medical requirements, and yet I would say I am an interested member of our medical faculty, and have been very closely thrown with them in all their work; I have participated in all their deliberations for a number of years, and our medical department is not an adjunct connected in a vague and general way, related only in name to the university, but is an integral part of our work, and it commands as much of my attention, thought and interest as any other department; therefore, I am from that standpoint somewhat instructed in the ways of medical faculties.

I would say also that in this great question of preparation for any course of study, whether medical or general, I have been a worker for a score of years. There is no one subject that has engrossed more of my attention, my thought, my time, than the question of educational standards, and there is no interest to which I have been more explicitly devoted than the elevation of educational standards in the southern states.

Twenty years ago Vanderbilt University adopted the policy of discarding preparatory work, of rejecting preparatory students and placing conditions for entrance that were practically identical with those maintained in the first-class institutions of the East. We did that in 1887, and reduced our students with one blow (that is, literary students), by about one-half. We have sacrificed something for our faith in educational work; and yet, gentlemen, perhaps no one fact can bring before you more forcibly the general condition of things in the southern states than this, that in this year, 1907, twenty years after we have made that fight, and twenty years after we have established our standard, the Carnegie foundation for the advancement of teaching issued a bulletin defining the preliminary educational requirements necessary for a high-grade college in fourteen units, and the Carnegie foundation cited our course alone in all the South as meeting those requirements. Now, there is some explanation back of all that. We are told that southern institutions have lagged behind in their work for educational standards. You must remember the South is a big



territory. It stretches from the western border of Texas to the Atlantic, and it covers states working under varied conditions and educational advantages. We have not had an adequate public school system in many of these states. We have been largely dependent on private initiative. We have state universities, yet these have not been amply supported. It would seem strange and yet it is a fact, that in all the study the Carnegie foundation gave to this matter, they were able to lay hands on but a single university whose entrance requirements were such that it could be classified as first grade. The states have given but little support to their institutions of learning. Our country is agricultural; our population is rural; 95 per cent. of our population live outside of towns of 8,000 inhabitants or more; they live in the country. Boys must secure their training in the country, and those who go back to work must work in the country.

We have practically no general system through the South of public high schools. I am aware that you often find schools enumerated as high schools in the commissioner's report, but very few of them come up to the standard of genuine high schools. We have a fashion in the South of calling any school a high school when it gives even one year of high-school work; it may begin its high school course at the sixth or seventh grade instead of the ninth grade, yet they call that a high school, and it is so regarded in the commissioner's report on education. Therefore, institutions that try to establish a real standard of education in the South are greatly troubled in order to get students ready for the freshman class, and Vanderbilt University has had to enter on a regular campaign of establishing secondary schools to get boys ready. We have established something like a score of such schools, and I suppose there are fully 2,000 boys in these schools through Tennessee, Kentucky and some other states, and from these schools we have drawn our freshman class.

I call your attention to another fact, that while the best of our institutions in the South have a grade of admission to college that is not what it should be, perhaps I may say only a dozen institutions in the South come up to such a standard. There are scores of others away below that.

I was instrumental in forming the Southern College Association some fourteen years ago. Understand, I am not talking about the Southern Medical College Association. I refer to the Southern College Association for literary institutions. That was devoted to the one idea of establishing a respectable standard for admission to college, and when that association was founded there were only six institutions in the whole South that came into it and pledged themselves to maintain a standard of admission to the freshman class that approximated even a three-year high school course. We accepted a standard of one whole year lower than the standard which the Vanderbilt University tried to enforce, and yet, after putting it down on that plane we could only find half a dozen institutions that would stand with us. Up to this date, fourteen years later, we have only been able to secure about one dozen other institutions that would come in and join hands with us. Beyond that there are a hundred or more colleges and universities all over the South that have a curriculum that does not even

approach the mediocre standard of which I have been telling you. I can point you to the records and show you the charter of a university in the South that is chartered for the express purpose, as stated in the charter, of preparing boys for college. I can show you the standards of other institutions that were not so honest as to express their purpose, but they did not even prepare them.

Now those are the conditions under which we in the South have had to work. I am profoundly interested in the elevation of professional education as well as in the elevation of general education, and yet, after twenty years of experience, the question always, as propounded to me, is a practical rather than a theoretical one; and any proposition along that line to my mind must stand the test of practical adjustability in order to commend itself to my judgment. I have advocated openly the regulation by the state of all degree-conferring institutions. I have advocated a board of education that could take away from literary institutions the right to confer degrees, and that should, by establishing some slight requirement, put all of our institutions on a plane, if not creditable, at least respectable, but it is very hard to get such a thing enforced.

Mr. Chairman, we all believe that one of the most desirable things in the world would be to kill some institutions. But it is not easy to do. I sympathize immensely with that old preacher who said he had a very gracious revival in his town and in his church, and, when asked how many accessions there were to the church, he replied, "None, but we got rid of five." (Laughter and applause.) An educational revival in the South would express itself, in my opinion, first of all, in getting rid of a number of institutions that we have, literary as well as professional; and yet the question is, How can that be done; how can it be brought about? You may, for example, pass a law to the effect that no student shall be received into a medical college without having received an A.B. degree; and we have enough colleges in the South to fill our medical schools with A.B. graduates, not one of whom could pass a high-school examination and get into the freshman class. The South has ample opportunity and ample provision to meet any demand of that kind that might be made. That, however, would not be promotive of sound standards, of honest work, or of the real elevation of professional standards in medical education. We should like to see the requirement of a thorough high-school course enforced. We should like very much to see a method devised by this Council, or with its assistance, of inspecting institutions to see whether that is enforced.

I do not see any very great advantage of making requirements until that demand is to some extent at least met. Throughout the southern states we have already a Southern Medical College Association that attempts to have a requirement of two years' high-school work before the student is admitted to any medical college. Vanderbilt University has increased its requirement to a high-school course. We turned off a score of students in the past year, but those students found a ready acceptance, without going a hundred miles from us, and I have not heard of any student thrown out of any southern medical institution under the present requirement of a two-year high-school course.

It occurs to me that one of the great services that this Council or this conference can render is to devise some plan by which the state will assume the responsibility for the admission of medical students as well as for the graduation or the admission to practice of medical students, and until that is brought about in the South, at least, it will be impossible to have another standard of medical education. We can not leave it to the institutions alone. Some of you may say at once, "Let a few of the good institutions make a standard." We have been doing that, but inasmuch as it has taken twenty years in a purely literary way for us to effect largely the standard of southern institutions, you can see it is a long, long struggle to effect the standard of medical education simply by the force of good example. But if the state is made responsible for the kind of men it puts into the profession, and if the state puts its hand on every man and is ready to inspect his work to see what he has done, and examine him in his medical college course, it follows logically and irresistibly that the state is equally responsible for the admission of that man to a medical college and to the practice of medicine. Responsibility there can not be evaded. If we could have a system of inspection in the South, and the acceptance of credentials of all students before they enter on the study of medicine, then we might enforce a reputable high-school preparation as the minimum requirement for the study of medicine, and that I should like very much to see. I do not believe, however, that the interests of medical education in the South would allow the establishment of a standard that went beyond that point at present. Suppose, for instance, it were assumed, or that an attempt was made by outside influence, by this Council, or by the Association of American Medical Colleges, or by the state boards of education in Massachusetts, Minnesota, Pennsylvania, or those throughout the East and West, to demand of all medical colleges a preliminary course in the sciences that have been outlined here this morning. Practically, Mr. Chairman, that would mean two years in college if it means anything. It may mean simply a subterfuge, or a mass of words. But if it means what it says, it means a two years' course in a reputable institution. Suppose we undertook to enforce that in the South; there are very few literary institutions in the South capable of giving the kind of course that has been outlined. There are very few southern colleges that are giving biology, however much we should like to see it. There are very few institutions prepared to teach it.

I had, as a member of a board of examiners, before me on one occasion the president of a college who was seeking classification for his institution as a high-grade college. I said to him in the course of my oral examination or criticism: "What have you in the way of scientific equipment? How do you teach biology, for instance? Have you any microscopes?" "Yes, we have two microscopes." "What did they cost?" He did not remember. I said: "Will you outline to me your method of instruction in zoology?" He replied: "When spring comes we go out and gather some flowers and buds and let our students look at them through the microscope." I said to him: "I thought that was botany, and not zoology." (Laughter.) Now, Mr. Chairman, that was an institution wanting to be

classified as a high-grade college by a board of examiners, and the South and West, too, are full of such institutions.

Students who come to the Medical Department of Vanderbilt University do not go through the literary department. We can give the courses outlined, as I wrote the chairman of the committee. Of course, we can give them, but that is not the question exactly. We could not give them very well in one year, but students who come to Vanderbilt University will come from these other institutions. They will present a certificate from a chartered college which states that they have had two years of academic work, and they have done a lot of work in physics, chemistry and biology, and will demand admission on the strength of that; when, as a matter of fact, they entered that institution without a high-school preparation, and it would have been far better for them if they had been studying English, Latin, algebra and geometry, instead of putting in their time on biology, physics and chemistry, for which they were not fit. The cause of medical education would by no means be promoted if a premium were put on the continuance of such methods of instruction, and it would be a step backward rather than a step forward to insist on it. The colleges in the South, and particularly the poorer colleges, would undertake to do that work themselves, and would establish courses with the design of meeting the requirements of your Council or Medical Association. You would have every one of these commercial colleges establishing preliminary courses; they would get most inefficient teachers, purchase \$5 microscopes, and undertake in one year to give all the scientific training that could possibly be demanded, and when they got through they would say: "We have given the course needed." In other words, gentlemen, it would be putting a premium on deceit, sham and fraud, and we can not afford to do that. We want to so guard things that that will be impossible. I am not speaking, mind you, against the principle, but I am outlining the difficulties. I am imploring this Council, that stands for education in all parts of our country, to bear in mind these facts, and to deal with these things as facts, and meet them in a way that will be operative. What will be the result if you throw the burden on our best institutions? If the result of it all is merely the crippling of two or three of the best institutions, and the throwing of all medical education into the hands of inferior ones, then I submit you have not served the purpose of medical education, but have rather hindered it.

Furthermore, we must remember that not with our colleges, not with the Council, rests the ultimate power in these matters, but with our state boards and state legislatures. It has been hard for us to get some of the states in the South to make and enforce a standard we all agree on demanding. We have tried to make them enforce a standard of pharmacy. We thought every druggist ought to know what he is doing. And our great difficulty in holding our students at Vanderbilt University to the end of a pharmacy course is that they can leave when it is half over, go and pass the state examinations, and practice. We have the same difficulty in law. We try to elevate the standard of education in law, but the state board of examiners will take students and admit them



to practice from schools that enforce inferior standards. If we undertake too rapidly or too violently to put a higher standard on these boards in these states, that they can not enforce, the result will be reaction. The state will repeal what laws we have, and instead of making progress we shall disorganize medical education, and the legislature will say: "We do not propose to make laws to satisfy the demand of Minnesota or Massachusetts; we will make our own laws, and we will simply do away with what we have and let all young men go into the practice of medicine who want to." That is the real practical difficulty in this matter.

I realize that education in different sections of our country has been far apart. Where you have institutions with a million dollars or more for income, we rarely have any institution with a million dollars for endowment. Harvard University, for instance, could use its annual income and duplicate the endowment of almost a dozen institutions in the southern states. I do not know of more than one or two medical colleges in the South that can rely on any large amount of funds outside of the fees of students. Of course, we must bring men to see the necessity of providing funds for medical education; we must bring our state legislatures to see that, and must work on them so as to secure a large endowment for this most important field of educational effort. Our whole effort, our whole influence, our whole life, must be given to the enforcement of that great idea; and yet as one who has given a large part of his active life to that cause, I urge that all our efforts be practical; that they be directed definitely to some end. In a spirit of enthusiasm we should not go beyond what can be administered, and, above all things, we should try to make good the ground we have gained before we assume to move out from our base and conquer the whole territory. That ground is the requirement that the Council has suggested, of a thorough high-school education, a preparation for medical education, just as good as literary institutions demand for their own work before they allow students to go into it.

I see great hope in the other work of the Council as regards, inspection.

The Carnegie Foundation for Advancement of Teaching has caused a shudder to run through all these institutions in the South by the publication of that report I alluded to a while ago. If this Council would inspect and tell the truth about all our institutions, point out their defects, point to their equipment, and give the facts as regards them, and as regards their manner of teaching, the moral force that would be exerted by such inspection would be a tremendous power and would have an uplift that could not be calculated or realized. That, sir, would be more efficient in the long run than an attempt by too drastic legislation to secure results that might work disaster to the cause we all have so dearly at heart. (Loud applause.)

THE CHAIRMAN:—We are all very grateful to Professor Kirkland for what he has told us. In the same connection I want to say a word, and that is, probably the one object that has been most sought after in all of this work of the Council has been to see that the preliminary education of the medical



student is sufficient before he begins the study of medicine, and it was early seen that that education must be passed on, not by the faculty of a medical school, but by some officer outside of the faculty of a medical school. It has become more evident all the time, as we have reviewed the facts, that an officer must be appointed by the state examining board; you cannot take and appoint some high school professor, some superintendent of public instruction who is entirely independent of the state licensing board.

We have investigated a number of these cases and found that unless that officer is under the direct control of the state licensing board, the examination to determine preliminary education is of little value. Of course, there are now a number of states in the country that have progressed that far and have the control of the matriculation of the medical student within the power of the state, which, of course, is very desirable, and which must be made universal.

I should like to say this one thing further, that at the Portland meeting of the American Medical Association, the Association of Southern Medical Colleges requested that the Council modify its report before it was presented at Portland, requiring a four-year high school course. After discussing this subject with representatives from the southern schools, we modified that to read: "An education sufficient to enable the student to enter the standard universities," with the understanding that many of the institutions in the South admitted men from three-year high schools. The southern delegates at Portland, representing many of the southern schools and the Southern Medical College Association, agreed to live up to the full four-year high school requirement by 1908, so that the recommendation which was made at Portland, that the preliminary education be sufficient to enable the student to enter our standard universities, was made with the understanding that it should be increased in 1908 to the four-year high school course. The southern men agreed to this and felt it was possible to bring their standards up to that point.

We have with us a number of men from the South this afternoon, some of them representing the Southern Medical College Association. The Conference would like to hear from Dr. Morris, of Alabama.

DR. LEWIS C. MORRIS, Birmingham, Ala.:—Speaking for Alabama, I would say that we have only two high schools in Alabama, as I understand it, that have a four-year course. All the other high schools graduate their students after three years, consequently no graduates, except those from the two high schools in Alabama that have a four-year course, will be eligible after 1908 to admission to medical colleges.

We think if we had three years more grace in which to work we might be able to increase our high school education from a three-year course to a four-year course. If we have to abide by the requirements of the Council of rejecting all students who have not had a four-year high school course, in 1908, it will mean that the graduates of our schools will be ineligible for entrance to our medical colleges, with the exception of those two high schools in the state which I have previously mentioned. I am informed that there are only a few high schools

in Tennessee which have a four-year course; consequently all graduates of high schools in Tennessee, except those from these few, will be rendered ineligible for admission to medical colleges.

I do not think that you gentlemen in the Northwest appreciate that this ruling of the Council, if carried out by the southern institutions, will work great hardship. I am with the speaker who preceded me in saying that a few of the best institutions will adopt it, it will work equally with all of us, and I am heartily in favor of it. The trouble is in the practical administration of such a law; it will not be carried out practically, and consequently the few institutions who abide by the ruling of this Council will be the sufferers.

A question was asked if any of our southern institutions had turned down applicants who did not come up to the requirements of the Southern Medical College Association. More than a score of applicants were turned down from our institution last year who did not come up to the requirements of the Southern Medical College Association. In other words, we have been living up to the requirements of that association, namely, for the elevation and advancement of the requirements of education for entrance to our medical colleges. Practically all of the colleges who are members of the Southern Medical College Association live up to the requirements of that association, and we have placed our colleges on a much higher plane or standard than we had up to the time the association was organized. I believe that great hardship will be worked on the medical colleges in the South if we abide by the recommendations of the Council of exacting a four-year high school course to go into effect in 1908, because we cannot accomplish in that time what must be accomplished in the high schools of our state. Greater hardship will be done to us than any of you in the Northwest appreciate, on account of the fact that we have to change the standard of our high schools before graduates from them will be eligible to our medical colleges.

#### INSPECTION OF PRELIMINARY CREDENTIALS BY AN OFFICER OF THE STATE EXAMINING BOARD.

In the absence of Dr. Dudley Tait, California, who was to have read a paper on this subject, the Chairman called on Dr. S. D. Van Meter, Colorado.

DR. VAN METER said:—Mr. Chairman, it is rather difficult for me to reply to an important subject like this without preliminary preparation. But having had some little experience in the inspection of preliminary and other documentary evidence of qualification, I will attempt to offer a few suggestions which I hope may be of value.

In the first place, it may be stated the average executive officer of a board of medical examiners is not equipped or prepared to examine high school graduates for entrance to medical colleges or to pass on the documentary evidence, diplomas and certificates. In this Council I have urged for a number of years the establishment of inspection of medical colleges and institutions giving a preliminary education for entrance to medical schools. I believe it is a financial impossibility for a board, or an executive officer, or any committee of that board,

to inspect the different institutions of the country and give anything like an intelligent report thereon. As a member of the Colorado Board, I welcome the support of the Council regarding the inspection of different medical schools; let it be extended to the institutions giving preliminary instruction. The speaker who just preceded me has mentioned a sad dilemma in the South as to its medical educational institutions. I am sorry that such things still exist, but I believe that the solution of the dilemma which he has so graphically portrayed lies in the careful administration, by the state examining boards, of the questions that come before them. This inspection, based on the credentials, preliminary and otherwise, will be effectual in direct ratio to the personnel of these boards, and while I do not like to be considered a "knocker," I must say that I am ashamed of many of my confrères who are on the examining boards in the different states. I do not believe they are appointed from the best timber the profession affords. The organized profession of every state should begin long ahead of the time the appointments are made to select men with judicial minds, men who are trained and unqualified to pass on credentials and to pass on the qualifications of applicants before the boards. In my opinion, the solution lies in this Council collecting data from year to year, imperfect at first as it must be, but as it accumulates year after year it will become a most reliable reference from which the boards may determine what a high school diploma and what an A.B. from that or this institution means as to qualification.

In this connection I would like to speak of the advisability of having some record kept by this Council, or by some department of the American Medical Association, of the different men throughout the country who have been crooked in their dealings or who have failed in applications for licensure. Nothing would assist the examining boards more when such people apply for license in those states. In the last quarter we turned down, in Colorado, four men who were advertising to cure sexual diseases. We sent one man to prison for making a false record as to graduation. He claimed to have taken three courses at one of the Chicago medical colleges and one course at Omaha, while as a matter of fact we were informed that he entered the fourth year of the Chicago college on credentials of three years' attendance at another Chicago college. Another man we discovered, by inspection of his record, was a fugitive from justice. If every board reported monthly to this Council or to some other department, and such data were collected and kept on record, the secretary or executive officer in inquiring as to what credit should be given for preliminary and college education could easily find out many things or points about the applicant's moral character that would be invaluable in deciding the important question of education and moral qualification to practice medicine.

## WHAT CONSTITUTES A REPUTABLE MEDICAL COLLEGE?

Dr. Howard J. Rogers, First Assistant Commissioner of Education, New York, who was to have spoken on this subject, was absent, and Dr. Victor C. Vaughan, Michigan, was asked to present the subject briefly. Dr. Vaughan said:

The science of medicine is a collection and classification of facts gathered from the various sciences which can be utilized in the cure or prevention of disease. The practice of medicine is the utilization of facts contributed by various sciences in the treatment or prevention of disease. With this as my text, I will say that there are two methods of teaching medicine. The one is reputable, and the other is not. All of us gray-headed men, who graduated twenty-five years or more ago, received our medical education in a class of schools that would now hardly be called reputable. We feel this. We suffer from it every day. I say there are two ways to teach medicine. One is to take the isolated facts from the various sciences which are utilized in the treatment or prevention of disease and to teach them as isolated facts. That is the way we studied medicine. When we studied anatomy we did not know anything about the development of the human body. We knew nothing about embryology; possibly we saw a few models, but we knew nothing about the evolution of the different parts of the human body. We were taught regional and surgical anatomy that we might have this knowledge, so that we could utilize it in any surgery we might do. We were not taught any of the principles of chemistry; we were taught that it was not a good thing to mix acetate of lead with sulphate of zinc, because a precipitate would be formed, but we had no idea of the general principles of chemistry at all. We were taught that morphin, strychnin and similar bodies are alkaloids and obtained from plants, but as to the nature of the alkaloids we knew nothing. We were taught to use this knowledge by rule of thumb. Now, there are some medical schools still teaching medicine in that way. They are not teaching bacteriology as a science at all. They show this student how to stain the tubercle bacillus; they have a few microscopes, and the teacher gets out a culture of the tubercle bacillus, makes a stain, and shows the students how to stain tubercle bacilli. But they could not make a culture of it; they would not know how to go about it.

I think I am not violating any confidence when I say that there are certain men who teach bacteriology and who start at the beginning of their lectures with a lot of tubes already made. They do not know enough about bacteriology to make cultures. They hold up these tubes and say, "This is a diphtheria culture; this is a culture of tubercle bacillus," and if by any chance a culture goes bad they send and get another. That knowledge is worth something, of course. I have seen a man



who had no special training, working as a carpenter, cut a brace to fit an angle with accuracy every time. He never made a mistake, but he did it by rule of thumb. I have been at sea with men who could take the latitude and longitude of ships, but they did it by rule of thumb. They knew nothing about astronomy. That is one way of teaching medicine. Unfortunately, it is a method that is still followed to some extent.

The other way of teaching medicine is to teach the student the fundamental principles of these different sciences which have contributed to medicine; the fundamental principles of physics, of chemistry, of biology, embryology, of bacteriology, and to teach them as sciences apart from their practical application. When a man has been instructed in this way he has within him the capability of growth. He has the foundation; of course, it is not possible for a man to be expert in any one or two of these branches, but every medical student should have the fundamental principles of chemistry, of bacteriology ground into him. He should not only know how to stain the tubercle bacillus, how to recognize the diphtheria bacillus, but he should know how to make culture media, how to grow them, how to differentiate, how to inoculate animals, how to study lesions induced in these animals. It seems to me that right here, in the difference between these two methods of teaching medicine we have a distinction between reputable and a non-reputable college, as we look at it to-day. One is a scientific training; the other is a rule of thumb training; the one is building on the rocks; the other is building on the sand.

I am free to admit, and I am glad to testify, that the old method of medical education has given us many splendid results. But it has given us these results because the men who studied medicine in the old way did not stop its study when they left school; they have continued, and they have learned scientific methods, have adopted them, and carried them out, and I am perfectly willing and glad to testify that there are many of the poor schools to-day which are turning out men that will be capable practitioners of medicine. There are some men who will succeed in the practice of medicine, I do not care where they graduate. But the point I want to make is, for the great mass of medical students, for the average student, it is absolutely impossible to give him the scientific education that he ought to have, that he has a right to demand without, in the first place, his having the proper qualifications to build on; and, in the second place, without the school being able to furnish the equipment, the apparatus, the facilities necessary to teach medicine in a scientific way; and, in the third place, and probably this is quite as important as anything else, and that is, he should have as teachers scientifically trained men. I think this is the fundamental difference between the proper way of teaching medicine and the improper way of teaching it. I do not like the words "reputable" and "non-reputable."

While I am on my feet I want to say one word more. I was



much interested in what Chancellor Kirkland, of the Vanderbilt University, said about the condition of things in the South. I have no fear whatever that the South will, if you give it a little time, recuperate itself and bring forth good medical men. When I am called on by my students to hold up to them the name of some illustrious American physician, I frequently go to the South. Who was Ephraim McDowell? Who was Bradshaw, who made the first, or one of the first, successful amputations of the hip joint? Who was J. Marion-Sims, a practicing physician in the then village of Montgomery, Ala.? Who was Long, who first utilized anesthesia in the removal of tumors? Above all, who was Walter Reed, a graduate of a Southern medical school; a man who wrote the brightest, and, I might say, the only bright page in the history of American intervention in the affairs of Cuba? So I am not at all afraid that the South will not do its duty in medicine as it has in many other things.

DR. BEVERLY D. HARISON, Detroit, Mich., read a paper on "Methods of Conducting the State Board Examinations."

DR. W. J. MEANS, Chairman of the Judicial Council, Association of American Medical Colleges, followed with a paper entitled "A Plea for a Licensure Examination in Two Parts."

These two papers were discussed jointly.

## METHODS OF CONDUCTING STATE BOARD EXAMINATIONS.

Dr. Beverly D. Harison, Detroit, read a paper on this subject, as follows:

My time recently has been so much occupied with other very immediate and necessary duties that I have had no opportunity to give to this very interesting, important and practical subject the thought and preparation it deserves. I will, therefore, not attempt to cover the subject in a thorough or exhaustive manner, but rather from such a standpoint and briefly as will tend to bring out discussion and the opinions of those present who are better qualified than I to review the subject.

### THE WRITTEN EXAMINATION.

The almost universal method of written state board examinations in this country has its advantages and disadvantages. From the point of view of utility and perhaps necessity at this time, the written examination takes precedence over all other forms, and the reason for this seems very clear, and is due to several seemingly uncontrollable circumstances and conditions, which may informally be enumerated as follows:

1. Conditions involving a board membership representing the several schools of medicine recognized by law. This condition is suggestive of embarrassment in selecting any one-school hospital, clinic or laboratory for the purposes of examination.

2. Membership on a medical board is usually limited to practitioners in general practice and who have no active connection with schools or hospitals as teachers, and who, in order to qualify legally for membership, are required to have been several years in active practice. While the above limitations covering membership presume absolute independence of med-

ical college influence, they are not qualifications necessary for a high-grade examiner.

3. The written examination is the easier and more convenient method, allowing members to prepare the questions at leisure before leaving their homes, and also not absolutely requiring their presence at an examination.

4. The usual board member receiving no compensation from the state, feels that two or three days' absence from his field is as much time as he can afford to give to an examination.

5. The expense and difficulty connected with the obtaining of proper clinical facilities necessary in this form of an examination, and also the greatly increased time necessary in such an examination.

6. The expense and difficulty in connection with the obtaining of suitable laboratories and the added expense and difficulty of obtaining qualified examiners, especially from the board members, and also the increased time required in such an examination.

7. The additional time required in an oral examination added to the written one.

#### THE IDEAL EXAMINATION.

I think no one will take issue with me when I state that an ideal state board examination should include, in addition to the usual written one, an oral, a laboratory and a clinical examination. The combination examination included in the written, oral, clinical and laboratory is the usual method in Great Britain, Germany and other foreign countries, and this method of examination is also in force in Ontario. It is also the usual medical college method in institutions of the first class. A written examination is by far the most ineffective test of all the usual forms of examination, for it is a well acknowledged fact that candidates who are incapable of demonstrating practically a proper knowledge and training very often succeed in obtaining a high standing in a solely written test. The results obtained in examinations where the requirement of graduation from a reputable medical school is not demanded will conclusively prove this statement. A fairly thorough course in quiz compends and published examination questions and their answers will usually obtain good results in the written examination.

It must be taken for granted that the usual board method of a solely written test of qualification is unsatisfactory and non-effective from the standpoint of thoroughness and absolute testimony of an applicant's actual acquirements of knowledge necessary in the profession. The question naturally arises, therefore, is it possible and practicable to overcome the objections I have enumerated which have heretofore prevented the state board examination from being as thorough and practical as it should be, having in view the theory that the state should review the work and examinations for degree of the medical colleges? I believe under certain limitations it is not only possible, but also a comparatively easy problem for boards to conduct their examinations along more practical lines than has been the rule heretofore.

The following method proposed is merely suggestive, and undoubtedly could be improved on in relation to its detail. The

examination, in order to be thorough and practical, should cover four divisions, namely (a) the written, (b) the oral, (c) the laboratory, and (d) the clinical. Every subject listed should require an examination in at least two of these four divisions, with the total requirement of percentage divided, having in view the number of divisions in which the subject is listed. For example: Anatomy should be written and oral or laboratory; histology and embryology, written and laboratory; physiology, written and oral; chemistry, written and laboratory; bacteriology, written and laboratory; practice, written and clinical; pathology, written and laboratory; gynecology, written and clinical.

#### THE TIME ELEMENT.

In connection with the above suggestive division, the questions in the written examination could be reduced in number, say from the usual ten questions to five questions, and these could also be reduced in scope and the time required if necessary to the extent of 50 per cent.; therefore, a written examination formerly covering a period of three days could be reduced to one and a half or a two-day examination. Nearly all state board examinations are conducted in cities having sufficient outdoor clinics for the purpose of examination, and it would be a comparatively easy matter to obtain the use of such clinics for examinations by boards. Proper committees made up of board members could take charge and conduct the clinical and oral examinations necessary, without adding more than a day to the time taken now in the written examination. Under ordinary conditions it may be taken for granted that it would be impossible to obtain from board members any member or members sufficiently qualified to examine properly qualified applicants in laboratory work and methods. This difficulty, however, could be overcome by the appointment of one or more local laboratory men unconnected with medical schools and who could examine applicants either prior or subsequent to the regular examination, and who could also report their findings to the board when completed.

It does not seem to me to be essential or necessary that a state board examination should be either in part or wholly conducted by its members. Under the system of the identification of candidates by number the board could very properly, covering the written examination at least, appoint especially qualified examiners residing throughout the state, who would furnish the questions on the several subjects listed for examination. These examiners would be appointed with especial reference to their qualifications in the subjects assigned. The answers, when completed under the supervision of the board, could then be sent to these examiners for marking and report. There would be no necessity for these examiners to personally attend the examinations, as the answer papers would be returned by examiners to the board for filing and future review if necessary. This method in itself would be a guarantee of fair and effective work on the part of such examiners.

Including this very superficial review of the question of methods of conducting state board examinations, I believe the method at this time employed by the majority of boards to be very de-

fective from the standpoint of accuracy in determining the qualifications of applicants for state license. The difficulties I have enumerated as hindrances to a reformation of method I think could easily be overcome in time. I would emphasize the great importance of this question and suggest to the Council on Medical Education the immediate necessity of furnishing the boards, in the very near future, with a well defined plan for their study and action.

### SHOULD LICENSURE EXAMINATION BE IN TWO PARTS, AND HOW SHALL THEY BE CONDUCTED?

Dr. W. J. Means, chairman of the judicial council, Association of American Medical Colleges, followed with a paper entitled "A Plea for a Licensure Examination in Two Parts."

Medical education in the United States is in a transitional stage, and there has never been a time when more activity has been manifested than at the present. The last decade has been made an epoch of phenomenal progress toward higher standards of professional requirements. The methods of teaching are being studied carefully with the view of securing the best results. This educational movement has been brought about primarily by conscientious educators and broad-minded, progressive, unselfish men of the profession, individually and collectively.

Collectively, much credit must be given to the leaders of the American Medical Association for their thorough and admirable organization of the profession, also to the colleges that are members of the Association of American Medical Colleges. Through these great scientific and pedagogic bodies a sentiment has been created for higher professional standards which has been far reaching. Through this activity and sentiment the legislators of the various states of the union have been aroused to the necessity of protecting the public against ignorance and quackery under the guise of legalized practice, hence the enactment of laws governing medical education and medical practice. We need not contrast generations to see evidences of the great work accomplished and in progression. The student of a decade ago knows that the methods of teaching and of practice have radically changed since he received his license to practice the healing art.

#### RELATION OF LICENSING BOARDS TO MEDICAL EDUCATION.

It is not my purpose to mention the laws of the various states governing medical education and practice. They differ more or less, but none have reached the ideal as yet. It will be sufficient for my purpose now to consider in a general way the relation of the existing examining and licensing boards to medical education. It may be said that in most of the states medical laws take full control of medical education in that they prescribe minimum preliminary educational requirements to begin the study of medicine, the number and length of annual courses, and, finally, a licensure examination to practice. The laws in some cases prescribe the number of teaching weeks and even the subjects that must be taught, the equipment of laboratories and clinical facilities, and then a diploma from the college that complies with these requirements, before an examina-



tion for licensure will be granted. The law, therefore, in a measure, makes a medical student a ward of the state. It leaves to the college the privilege alone of instruction. The interval from the time permission to study medicine is given until the finished product presents himself for a license to practice is quite a segment in an educational cycle. It seems to me that it is out of the question for an examining board by a few questions to determine very accurately the proficiency of the applicant, and, in particular, the character of the work done during the college years.

I assume that we are all agreed as to the value of the basic subjects as a foundation for a medical education, and I believe we are all agreed that these subjects should be taught not only theoretically but by actual laboratory experience. Anatomy should be taught not alone from charts, but from the natural body. Chemistry, to make it worth while, should be taught in the chemical laboratory. Histology, bacteriology, pathology and physiology can not be taught theoretically alone if they are to be of any practical value in the prosecution of clinical diagnosis and for preparing students for the practice of medicine and surgery. Therefore, I believe examining boards should look in on the young men to whom they have granted permission to study medicine during their college course, and determine whether they are receiving proper instruction at a time when it will be of the most value in laying the foundation for future practice.

#### LACK OF KNOWLEDGE OF THE FUNDAMENTALS.

I am satisfied that any one who will take the pains to study the grades given by the different examining boards of the states can not help being impressed with the lack of preparation of students in the subjects taught in the first and second years. To ascertain, if possible, the average grades in the subjects of anatomy, physiology, pathology, bacteriology and chemistry given by the various examining boards, I corresponded with the secretaries from some twenty-five states. My inquiry met with a generous response. From this data collected I have made a summary that emphasizes this deficiency. The summary includes the results of all examinations in some fifteen states in 1905.

The average grade of those who passed in anatomy was 74. The average grade of those who failed in anatomy was 58.5. The average passing grade in pathology was 78. The average failing grade was 69. The average passing grade in chemistry was 84.5. The average failing grade was 58. The average passing grade in physiology was 80 and the average failing grade was 58. Of the failures, 75 per cent. were re-examined and 50 per cent. of these were passed. I did not consider the grades given in the clinical subjects.

These grades are sufficient to emphasize the fact that the average man licensed to practice medicine is deficient in knowledge in anatomy, physiology, pathology and chemistry, and when we consider the elementary character of the examinations the deficiency is more apparent. How many could have passed



if they had been required to make practical tests in the laboratory? How many would have been able to make a bacterial examination for gonococci or tubercle bacilli? How many of them would have been able to prepare a pathologic specimen for microscopic examination? How many would have been able to make Widal's agglutination test for typhoid fever?

#### REASON FOR THE SOPHOMORIC EXAMINATION.

Again, note the average grades of those who failed, and further note the percentage passed at a subsequent examination. It is a pertinent question to ask where the knowledge was obtained that made it possible for them to pass a second examination. Certainly not in the laboratories of some college, and not under competent teachers, but more than likely from conning quiz compends. The query arises then, what is the remedy? Evidently the examining boards must look after their protégés during the intervening years to see that the foundation is properly laid. It is my contention, therefore, that the undergraduate should be given an opportunity to present himself for examination at the end of his second year's work to ascertain whether he has attained a proficiency in the basic medical sciences, and, if so, to receive credit for the same.

At the completion of the second year, according to the curricula of our colleges, a student is supposed to have completed his class and laboratory work of the subjects that are classed as basic medical studies, such as anatomy, histology, embryology, physiology, physiologic chemistry and bacteriology. If the student satisfies his teachers of his proficiency he will not be required to do any further class work in these subjects, and is privileged to take up the study of the third and fourth years. This is in line with the scheme of education from the grammar department through the high school and college, and is based on graded work from term to term and year to year. Each term and each year is supposed to complete a part or the whole of a study.

In most states the law prescribes four annual graded courses. By this I understand that the schedules must be so arranged that students pass from one year to the next and so on through the course. Medical colleges in compliance with this arrange their curricula, beginning with the subjects of anatomy, physiology and chemistry in the first year, completing them in the second year along with histology, embryology and bacteriology. Then follows the clinical studies in the third and fourth years. The Association of American Medical Colleges prescribes that time credit can not be given a student until all conditions that may have been imposed in a former year are passed off. If this scheme in literary and professional education is good, the state should not only grant the same privilege of intermediary examinations, but should make them obligatory, giving credit on the final licensing examination.

#### THE NEED OF PRACTICAL EXAMINATIONS.

An examination by the examining board at the completion of the second year can be made more comprehensive than at the end of four years. It should not be theoretical alone, but practical tests should be given in the laboratories. Such an examination would be an incentive in the first place to more thor-

ough teaching in the laboratories, and in the second place would be an incentive to the student to closer application and a higher proficiency. Under the present régime of the state examining and licensing boards there is not much stress placed on laboratory proficiency. To prove my contention let me call your attention to the method of examining. We grant the questions are fair and comprehensive so far as theory goes, but by what mental process can the examiners determine whether the students have ever looked through a microscope or saw the inside of a laboratory?

Again, teachers will testify how difficult it is to get students to understand and appreciate the necessity of a thorough grounding in the basic studies, and also that they often pass them knowing their inefficiency. If students understood that they would be examined at the close of the second year, not only by their teachers, but by the state examiners, and that a passing grade would be credited on licensure examinations, they would have a purpose in doing good work. Should a student fail in his examination, it gives him an opportunity to go back over the work at a time when it will most benefit him and when he will be forced to do it.

If a student, after having complied with the legal time requirement, fails, it is a most difficult thing for him to go back to the study of his first and second year's work. He spends a few months in conning quiz compends, as suggested before, and then rarely fails on a second trial. I might ask, what is the practical value of such knowledge? The failure of a student to pass an examination at the end of his second year not only forces him to go over the subject again in a proper way, but is a notification to his college to look more closely after the teaching of the studies of the first and second years. Colleges are too prone to pass undergraduates. This is considered true of schools that depend on the tuition of students for maintenance. If a student has passed his first and second year and knows that he will get credit for the same, he will no longer have it on his mind that he must prepare for a technical examination in these studies, and will, therefore, continue his practical work up to the end of the course.

There is also something to be said in favor of the student. Two years and more is a long period between the study of the subjects of the first and second years and his licensure examination. He may forget, and does forget, many of the technical things that he learned during his early years, and these may be the questions asked in a final examination. This fact is recognized by the colleges, and has led to review work of the fundamental studies to prepare their students for examination. It takes the time that should be devoted to clinical subjects of the fourth year. In fact, it becomes, in a measure, a process of cramming for the state boards.

In Great Britain a medical student has to register with what is known as the General Medical Council, and he can not obtain a license to practice medicine until five full academic years after registering, during which time he must produce evidence of having passed all the prescribed examinations. These have to be taken through the course with certain time intervals between the succeeding examinations.

Some of my remarks might be interpreted as a reflection on American medical colleges. I am frank to say that the average grades given above indicate that the majority of American colleges are not giving good practical work in anatomy, physiology, pathology and histology, and this would be more in evidence if practical tests were made. If any teacher or official doubts this statement I would like to ask what percentage of his graduates can make a diagnosis of typhoid fever by laboratory methods? How many of his graduates can make a practical microscopic examination of the blood? How many can make a microscopic examination of the urine that would be of any considerable value? How many can make a bacteriologic examination of tubercle bacilli and gonococci? If the majority can not, then the college has failed to give the proper instruction.

#### THE REASONS SUMMARIZED.

To summarize my contention for two licensure examinations, one to be held at the end of the second year, the other when the student makes application for a license, I submit:

1. It is only fair to the student that he be given an opportunity to pass an examination in the studies that he has completed in the class and laboratory, and thus be relieved of further anxiety during the two years spent in the study of clinical subjects.
  2. If he fails to pass the licensing examination in these studies, it gives him an opportunity to go over them again at a time when he is compelled to do it, and under the direction of competent teachers.
  3. With an examination at the end of two years the examining boards will be better able to determine whether the applicant is sufficiently grounded in the fundamental studies and laboratory work for further progress in a medical course.
  4. Such an examination would be an incentive to students to do better work, and a suggestion to the colleges to provide proper facilities and qualified teachers.
  5. The state examining and licensing boards having prescribed minimum requirements, both as to entrance qualifications and time limits for a medical course, and also equipments and facilities, should, in the interest of medical education, take note of the work being done in the first two years of a medical course to see and know that students are properly equipped for the third and fourth years.
  6. The examination both at the end of two years and for licensure should be made more comprehensive and practical.
  7. Examinations made under the conditions herein mentioned would do more toward elevating the standard of medical education in the United States than legislation in any other direction.
  8. A re-examination by a licensing board should be permitted only on evidence that the applicant had pursued the study of medicine, and particularly the subjects in which he failed, with competent teachers and under conditions affording proper facilities for practical teaching.
- This procedure is not entirely new. It is already in vogue in four states, Virginia, Maryland, Michigan and New York. Oregon some years ago conducted two examinations, but I am informed has now but one. The boards of several other states

contemplate asking for a modification of their laws, giving them privilege to examine undergraduates.

To put in practice examinations of undergraduates would require a change in many of the laws now in operation and it would entail extra work on the members of the examining boards. These are, however, matters of little consideration, providing the qualifications of the men licensed to practice medicine are assured.

The inspection of medical colleges as to their laboratory equipments, facilities for teaching clinical medicine, methods of teaching and personnel of teachers would be almost unnecessary. The colleges would be forced to give instruction that would qualify their students to pass examinations made at the proper time and in a practical way.

DR. CHESTER MAYER, Kentucky:—As a member of the Examining Board of Kentucky, I want to say a few words on the subject under discussion.

In regard to the examination of candidates for licensure, it is not only a problem for the field of medical instruction, but one that confronts every department of existence. We have got to recognize the great inadequacy of preliminary instruction in this country. It is equally bad in the North, South, East and West. Business men complain that young men entering business have no practical knowledge fitting them for it. Now, we, as medical men, may teach medical students, but many of them do not understand what we are talking about because they have not had sufficient preliminary education. Medicine, as has been said, is not only a science, but is an art. There are men who dwell on the art side of medicine who know nothing about the science. Anybody who has ever examined papers of graduates from medical colleges knows that, although they have listened to able professors, whose teaching was excellent, they have not understood what was said. I recall one of the best teachers of obstetrics I ever heard lecture. Fifty-eight of his students came to us at one time for examination, and of that number there were ten who had practically no knowledge of obstetrics. This was simply because they did not have sufficient preliminary training to enable them to comprehend what they had been taught regarding this subject. As was pointed out by Dr. Van Meter, it is impossible for us to go all over the country and find out the relative merits of each high school. That is not necessary. In Kentucky we have an educator, an excellent man, and it does not make any difference what degree the applicant has, whether it be A.B., B.S., or what-not, he must come before Professor Sinclair and pass an examination before he matriculates. They are allowed to enter the college in a tentative way, but before 20 per cent. of the term has elapsed, they must show their credentials from the Kentucky State Board. We can not go to work and find out what the status of every high school is, but by a rigid examination of applicants as they appear before us we can determine their qualifications. Our standard is not a very high one, although it is the standard adopted by the Association of American Medical Colleges. We find that there are only about three-fifths of those who appear before us who are entitled to begin the study of medicine, and after four years of teach-



ing we find only half of those who have diplomas are fit to engage in the practice of medicine. The licensing and examining boards should get together and uniform regulation should be adopted by all.

DR. S. D. VAN METER, Colorado:—I have listened with considerable interest to Dr. Harison's paper on the methods of conducting examinations; but I would like to express my personal views relative to the conduction of an examination to determine the qualification of an applicant for license. I have had some little experience in this regard.

I wish most emphatically to state that in my opinion a clinical and oral examination is worth 90 per cent. of the 100 units in determining the qualifications of an applicant for license.

Our method in Colorado is as follows: An applicant for license files under oath his record from birth up, including his preliminary and medical education, hospital teaching, Army or Navy service, etc. This record is carefully investigated and verified. If it is supplemented with an unquestionable record of reputable practice, and convinces us that that man is qualified, we license him without question as to whether he comes from a state that recognizes a similar status in Colorado. If not, he is examined by the board, by eight members on the eight subjects. He is examined in two days orally and clinically, with a limited amount of laboratory work only confined to chemistry. He is examined by number; that number is safeguarded against substitution by the man's photograph on his admission card to the examiner. The examiner knows his age and years in practice, and that only. He knows nothing of his school or his preliminary education. The board convenes two days. At the end of the oral and clinical examination, the board votes as to whether the applicant by a certain number is to be granted a license or not. If the vote is unanimous, he is granted a license without having to pass a written examination, provided the record shows he has received the standard course of instruction. If one man on the board should vote in the negative, the applicant must take a written examination. We have found this not only a practical, but very good method. We believe that by this oral and clinical examination in nine cases out of ten we can determine the applicant's qualification with far greater accuracy than by the written method. The latter method, however, is advisable, in fact, essential, where applicants are refused on lack of educational qualifications—owing to the papers becoming tangible evidence of such deficiency.

DR. M. F. JARRETT, Kansas:—I wish to refer to one point spoken of by Dr. Harison in his paper. We have been talking about the requirements of medical students, and we all agree in regard to certain preliminary requirements for entrance to medical colleges. I want you to bear in mind what the essayist has said with regard to medical examiners. There we sometimes overlook a most important point. Some of these men are not qualified educationally to be examiners. I know of two members of examining boards whose educational requirements are far from being up to the standard. One man is so illiterate that he can scarcely write an intelligible letter, he misspells words, and yet he is a power politically.



That is why he got his position. As the essayist said, it is well for us to look to the requirements of our medical examiners, and I think that is one of the best points he made in his paper. We should strive to select men for these positions who are educationally qualified to fill them. Let us agree on the men we want and work for their appointment to these positions.

DR. WILLIAM A. SPURGEON. Indiana:—I want to suggest that the examination given to an applicant who wants a license to practice medicine and surgery by an examining board in this country usually fails to determine his qualification. You can not, in a three days' examination, tell whether a man is qualified to practice medicine or not. Of course, we can not get along without the examination, and it is regarded as so important that the boards are as a rule called examining boards under the law. But I consider the examination one of the least important functions of the examining board.

It has been said here that before a man is appointed as a member of an examining board, he should be qualified for that position. I agree with that statement. This qualification should mean more than his ability to formulate questions and to mark papers. An examination by an examining board has much to do in bringing about a proper standard of education in this country, simply because it is an examination, rather than by virtue of the inherent qualities of the examination itself. The examining boards are sitting in judgment on the product of the colleges of this country, and the colleges know it. The students know it. The colleges know that their graduates must be filtered through the examining boards. The examining boards are strainers.

As regards examination, some men will pass examinations who are not qualified to practice medicine. They never will be good doctors. They could not be made good doctors, because they have not the inherent qualities necessary to make good doctors. We can not have too many safeguards thrown around entrance to medical practice. There should be a law requiring that every applicant should take a certain collegiate course, pass through the ordeal of his several examinations before the faculties and obtain a diploma from a good institution before he is eligible for examination. That is one filtering point. He should then pass before a competent examining board and let it by another test determine his qualifications. There are, of course, some splendid men who, because of their inherent qualities, can accomplish more than many of those who go through all these tests. But, after all, when we have determined a man's qualifications as best we can, we have accomplished our purpose.

The work of the examining board is not so much in conducting the examinations as in carrying out the provisions of the law, in fixing the standard and in requiring that colleges and students shall come up to this standard. The work of the examining board reaches out in various directions and has to do with many problems that are constantly presenting themselves. Therefore, we must not forget that executive ability, justice and conscience in the execution of the law are as much needed for the solution of these problems as for the formula-

tion of proper examination questions and then passing judgment on the answers.

DR. A. RAVOGLI, Ohio:—The examining boards have much to do in ascertaining the fitness of applicants whom they examine to enter on the practice of medicine. Of course, these examinations can be conducted in different ways. An examination in laboratory and clinical work would be excellent, in that it would probably show the ability of the candidate to better advantage. With 200 candidates to be examined, giving five minutes to each, it would consume ten hours to go over the replies to the written questions. The clinical or laboratory examination might be much better, or more appropriate, and yet, when the applicant has been well trained, we can determine very readily whether the candidates are fit to practice medicine from the answers given to written questions.

One of the duties of a board of medical examiners is to prevent illegal practice; to prevent candidates, who have not had the proper training, from taking the examinations and going before the public as physicians. I do not believe it is necessary, however, for the board of examiners to subject these candidates to all the examinations through which they have already passed in the medical college.

DR. W. S. FULLERTON, Minnesota:—I wish to enter a protest against partial examinations, for this reason chiefly, that a knowledge of practical questions which is forgotten in two years is not knowledge. For instance, let us take such an important thing as a competent examination of the urine, or the diagnosis of typhoid fever by the Widal test, and other things of a similar character; a student examined in them and passed as proficient by the state board at the end of the second year, is not a sufficient guarantee that that man at the end of two more years is competent to go into practice and still have that knowledge. Going back to the point I mentioned first, I will say that knowledge forgotten in two years is not practical knowledge.

DR. W. T. GOTT, Indiana:—I desire to say a word or two in commendation of these papers. Dr. Harison has outlined an ideal method of conducting examinations. However, we rarely reach our highest ideals. We only approximate them. I believe that an examination can be so conducted by the state board that it may cover a very wide range, and the qualifications of an applicant can fairly well be determined. However, that is the least of the reasons, in my judgment, why an examination should be conducted. My belief is that the stimulus to the student and faculty which comes from a knowledge that the student must come before a licensing body, without any sentiment or prejudice in his favor, is a most excellent thing.

In Indiana, where I have the honor of being a member of the state examining board, one member of the faculty of one of our leading institutions has been quoted as saying it was "not a question of preparing to meet your God, but preparing to meet the state examining board." (Laughter.) This shows the effect on the professor, but it also has a decided effect on the student.

I think the time has arrived when many medical colleges will have to go out of business. It seems to practical men, who have been conducting these examinations, that that will come true. I think, gentlemen, many of you see the handwriting on the wall. The weaker institutions will have to do better teaching or go out of business. I believe that the question of medical education should be undertaken by the state in a large majority of cases, with the exception of perhaps a few metropolitan centers. I do not believe the undertaking to teach medicine should be entered into by small institutions. The reason is that the conduct of a medical college to-day is a different proposition from what it was twenty-five years ago. It takes more money to equip laboratories and to conduct a medical college with salaried professors than the faculties themselves can supply. When the state gets behind an institution, however, we have well-equipped laboratories, and, in my judgment, we have medicine taught as it should be taught. When we come to compare the teaching of some of our state institutions that teach medicine, with independent institutions, it is not a very good thing to look on, as members of examining boards know, and I believe the time is near at hand when the state will get behind medical colleges. If it is important for the state to teach men mechanical and civil engineering and make even good farmers, how much more important is it to teach men who have to deal with the subtle forces that control life itself. These should have the best possible opportunities and the best training. (Applause.)

DR. R. H. GRUBBE, Ohio:—We have learned here to-day that much depends on evolution along two lines: The lifting of medical colleges out of commercialism, and the lifting of examining boards out of politics. (Applause.) In this country we should strive to bring about the consummation of getting these two bodies of men working together for the good of the profession. When we get the tone of the profession more elevated we will attract to our ranks the best young men of the country. Then these questions will solve themselves.

DR. A. C. PAXTON, Oregon:—One thing which comes within the province of the state medical examiner is to take cognizance of the general education of the applicant. This generally is most deplorable. While we see a great many eminently qualified men, we see a great many others who are only fairly well up in professional work. In fact, they show the greatest illiteracy. They can not express themselves clearly. These men ought to be graded in these matters. It is a pitiful reproach to have such men in practice. When the laity see a practitioner of medicine who is grossly illiterate they are likely to think ill of the profession in general. The public ought to be protected against this incompetent class.

I was dismayed, when I undertook to carry out my work as a medical examiner, to find what a large number of medical colleges are turning out illiterate men; they do not live up to their professed requirements as regards preliminary education. We all know that many of them show a gross lack of preliminary education. Even some of the schools that should not do these things are guilty. But there is great improvement and we can see light ahead, on account of the efforts that are being made.

DR. B. D. MYERS, Indiana:—This morning some one remarked that the proprietary medical school was a menace. Now, I do not want my remarks to be taken as reflecting on our own state board, which we in Indiana feel is all right; but examinations throughout the United States for license to practice medicine have put a premium on the work in proprietary schools, because applicants have not been examined as to their knowledge of laboratory methods. They have been examined in the old didactic way in which these proprietary schools have shown an apparent superiority over schools teaching laboratory methods. If there is one school in the country that is recognized generally as being a first-rate school, and it is not the only one by any means, it is the Johns Hopkins School. If there is any place in the country where men are taught to do things it is there. Students are not to answer questions in a parrot-like manner, as has been suggested in referring to certain schools, but are required to go through laboratory work, which will prepare them to stand high at practical examinations. These men go up against examinations with no greater success often than is obtained by men who have come up through the proprietary school and quiz compend. There is no one thing of greater importance than the manner of conducting examinations. If the state examining boards would conduct a practical examination, it would have a quick effect in bringing up the work in our colleges. There are doubtless great difficulties in the way, but these difficulties have been met in European countries. They graduate just as large classes over there as we do here, yet the professor of medicine or the professor of surgery will spend two or three hours in the examination of a single candidate. That means the candidates must not come up in large numbers, but in small groups. It seems to me some such system could be arranged here. The chief thing is how to carry it out, and that is largely a financial matter. If the boards can be paid enough to devote the necessary time to give these examinations it can be done. In this connection I wish to say there is no reason, I believe, why a larger fee, say from \$50 to \$100, should not be exacted for a licensure examination; and whether a man gets his examination at the end of the second year, or at the end of four years, is a matter of secondary importance. The student ought to pass examinations in anatomy and in chemistry at the end of four years, rather than at the end of two years, because there are clinical applications at the end of the four years which he does not get at the end of his second year.

DR. JOHN L. DICKEY, West Virginia:—I wish to say a few words on these papers. A man can not be a member of the state board of West Virginia unless he has practiced medicine for twelve years. Every member of our state board belongs to his local medical society, to the state medical association, and to the American Medical Association. Three of the members are graduates of Jefferson; three are graduates of the University of Pennsylvania, and the other four from schools nearly as good. So the state board in West Virginia, following the earnest work of the profession in the state, is the best board that has ever been appointed in that state. (Laughter.) Then, too, the governor insists on reappointing them for the



following four years; that is, those whose terms expire in June, although one of our members opposed the governor very earnestly in politics. But our governor is broad enough to reappoint this man, whom he thinks is a fit member of the board. We have tried to keep our state board out of politics, and so far we have succeeded. Whether it continues so depends largely on our future governor.

I can not agree with what Dr. Harison has suggested. We are not prepared to examine applicants with reagents and put them through an examination in chemistry like Professor Vaughan can do. That is not our business; nor can we examine them in spelling. They learn that in the common school, or ought to have done so. Nor can we examine them in biology. They are supposed to learn that in the one-year course; nor can we examine them as to their knowledge of Latin and Greek. A man comes before the state board for examination and says that he has had four years in a competent and reputable medical college, with clinical experience of one year in a hospital, and he appears before us, for what? As Dr. Spurgeon said, the state board is the final filter. We just filter him out into the world, and are not to examine him in those branches he is supposed to know. Our board is composed of practical men, who put up a practical examination, and if a young man has complied with all the requirements, and yet is unable to get 85 per cent. of the general average, we do not pass him. We rejected 21 out of 35 last fall. (Applause.) And I think we can say, Mr. Chairman, that our examination papers would be laughed at by some of you as easy. They are plain, practical, easy questions. What do I know about chemistry? I graduated twenty-five years ago at Jefferson. Professor Vaughan could throw me in a second in that branch, yet I have been examining for the last year in chemistry (laughter), and gave them ten plain questions, and 21 out of 35 failed. But the point I rose particularly to make is that the state board of examiners in West Virginia, or in any other state, is not created for the purpose of finding out what these young men know, but to find out whether their knowledge for the last eight years has fitted them to be turned out on the community. And it takes a practical board like ours to do that. (Laughter.) The requirements of our state examining board are not elaborate educational requirements, but to my mind they require men who are fair, who are just, and who are sensible.

DR. ARCHIBALD L. McDONALD, North Dakota:—It seems to me a state examining board, composed of the best men engaged in the practice of medicine, has a certain responsibility outside of professional qualifications; that is, the members of the board should be reasonably satisfied that a man is a gentleman and determine whether or not he is going to make a reputable practitioner. I think any six or eight men here could take a candidate for about eight minutes and satisfy themselves as to his personality and whether he is a desirable man or not. That is one thing the state board should do; the members should come in personal contact with the candidates. Those of us who have had experience in teaching and with written examinations know that in half an hour by means of



a personal quiz we can decide much more as to a man's knowledge on any subject. Furthermore, after the state board has passed a man, there should be some things they should have supervision over. If they are satisfied that a man is not a reputable practitioner; that he is advertising or does criminal work, they should take it on themselves to enforce the law. It is true, this is a part of the function of the state medical association, but the state board of examiners has certain powers delegated to it and is more responsible as an independent body. The main thing is the personality of the individual. It is not necessary for a man to answer many questions in anatomy or other branches before we know his personality, and whether he is a practical, all-around man, and this can be found out more by a practical examination than by a written examination.

DR. WILLIAM WARREN POTTER, Buffalo, N. Y.:—A state board is appointed to determine whether the colleges in the state have equipped the candidates properly or not. The purpose of the state board is to examine, and, it seems to me, it is entirely impracticable to make this examination an undergraduate examination. It is a postgraduate examination; it is not to be surrounded with the detail of the laboratory, nor of the lecture room, but a practical, solid, everyday examination, as outlined by my distinguished friend from West Virginia. I quite agree with what he has said on this subject. Do not let us be loaded with too much laudation or too much power. I apprehend that there are a few who want us to become prosecutors. I think we can justly be absolved from any duties of that kind. We are just simply elected to conduct examinations. In New York it requires four days to examine candidates in the seven essential departments of medicine, and at the June examination last year we had 350 candidates. One gentleman said: "Let us appropriate \$150 or \$100 for laboratory and other examinations." If you go up against legislatures you will find it difficult to get money for expenses. They are jealous of examining boards in reference to the question of expenditure. We can simplify the matter; we can harmonize it, and we can bring it up to a uniform level, that is, by raising the standard, by discussing the various sides of the subject, as we are doing to-day, and I hope we shall be able to accomplish very much from this meeting.

I wish, before I sit down, to say just one word about inspection. I consider that to be one of the most important things that has been evolved, the inspection of colleges, and it should be done in a thorough manner. You have had it done and have brought out the details here that are most interesting and instructive, and I hope that you will carry it on so as to include the inspection of the examining boards. I think we will all welcome that inspection. (Applause.)

DR. GEORGE H. PRICE, Tennessee:—If the suggestions made by Dr. Harison can be carried into effect, we would then have at our command an ideal method of deciding the fitness of men to practice medicine. But where a large number of men appear before state boards of medical examiners, a detailed examination of the character outlined would consume a great deal of time.

Tennessee requires men coming before the board to stand the state board examination. But a few years ago there came into the state legislature a man who had a relative in one of the medical schools of Nashville. The idea was conceived that graduates from institutions within the state should be exempt from examination. This did not meet the approbation of the teaching faculties, but it did meet with the approval of the students. There was a marked demonstration against the state board examination by men graduating in the state, with the result that for two years we were without authority in Tennessee to examine any man who graduated within our state.

The suggestion made by Dr. Means in regard to examinations at the end of two years is very important. If this can be arranged for in every state it would be a great advantage. I have observed that after a man has been graduated and goes directly to the state board he stands a first-class examination, but if he has graduated and appears before the state board at the expiration of say two years, he barely will pass, yet he may be a good man. But if he has been out for five years the chances are against him. If he has been out, say, for ten years, he almost invariably fails. It is a difficult matter for a man who has reached the age of 40 or 50 to go from one state to another and pass the required examination.

The plan pursued in Colorado, as outlined by Dr. Van Meter, is a good one. It meets the requirements of those men who have already been engaged in the practice of medicine and have established themselves in the communities where they have located. For graduates coming directly from institutions, however, a more rigid examination should be required.

The gentleman from West Virginia referred to plain and practical examinations to determine whether men are competent or not, and then he said out of 35 they plucked 21 who were not competent. He said the examination was easy (laughter), and it is an easy thing for a man to forget some of the terms in an easy examination. We suffered from the same conditions which surrounded West Virginia up to a very recent date. I believe it is a good thing to have an intermediate examination. We find undergraduates can not stand an examination, as a whole, but they may stand a two-year examination, and if prepared to stand a two-year examination it is all right. At the same time, by scrutinizing very thoroughly the work of the first two years, the state board could stimulate the institutions to do better work.

DR. DICKEY:—West Virginia has been a dumping ground for Tennessee, Kentucky and other states. (Laughter.) Formerly we had a rush of candidates to our state for examination, because unfortunately, we had to allow undergraduates to come up for examination, and I was proud to hear our chairman remark that the undergraduate states had been cut down to five. Our legislature a few weeks ago passed such an act, which went into effect after its passage, that non-graduates can not come before the West Virginia state board any longer, so that instead of having 35 men, we only had nine at the last examination, held three weeks ago.

I would like to hear from Dr. Van Meter with reference to

the matter of why Colorado is among the states who allow undergraduates to come up for examination.

DR. S. D. VAN METER, Colorado:—I am glad to have the opportunity to defend my position, taken when I said that Colorado was proud of being one of the five states that permit undergraduates to come up for examination. My reason for this is simply to prevent a duplication of California's experience. I do not know whether there is any gentleman here from California or not, but in brief it is this: They established a law exacting certain prerequisite requirements of a high standard of all applicants for examination. The standard was so high that they prohibited a man from Dartmouth from applying for a license who took his course in chemistry in the academic department and was given credit for it when he entered the medical department. Remember, he was not allowed to apply for examination. Such a policy caused a revolt in the public mind so strong as to enable a certain class of practitioners to secure a law in California licensing non-drug practitioners, osteopaths, etc. In four years' time, I think, there were 457 such licentiates registered in California. Had they been allowed the privilege to come up for examination, out of that 457 there would perhaps not have been four licenses issued to practice medicine in that state.

In this matter of medical licensure it is the end results we are working for. We have allowed undergraduates to come up for examination to control these so-called non-drug doctors. In the past four years only one man has been licensed who has not lived up to the standard established by the Council of the American Medical Association.

Right here I wish to sound a note of warning that if you too greatly restrict the admission to the examination for license you are going to have California's experience repeated in many states; you are going to revive sectarian medicine; you are going to have multiple boards, and the end results are going to fall far short of those of Colorado, even though she does permit undergraduates to come up for examination.

In connection with Dr. Means' paper I am glad to say we have recognized in Colorado the necessity of examining students in that state, and commencing with the July examinations, we shall examine applicants from all schools presenting certificates of having completed two years in the fundamental branches. These will be given credit in their final examinations when they appear after the fourth year.

DR. WILLIAM H. WATHEN, Kentucky:—I wish to emphasize, as I have previously done, the fact that while medical colleges have done much to elevate the standard of medical education because of the conviction that it was the correct thing to do, yet most has been done because of the legislation that made it necessary to do it. We have talked a great deal about the requirements for admission to medical colleges and about an intermediate course in biology, but we have not yet come to any practical conclusion or solution of the question as to where the measure is to come as to these qualifications. So long as we had no measure for admission to a medical college in Kentucky, and no measure for the knowledge of a man who graduated from a medical college in Kentucky to practice medicine, we had a chaotic state. We gave time and attention to get-

ting rid of quacks in the state and in keeping the quacks out, and we succeeded. Then we directed our attention to the fact, as shown by the state board examinations, that it was necessary to do something else to improve the medical situation. I am proud of the examining board of Kentucky, also of the medical colleges of Kentucky and the profession of that state. These bodies joined in their efforts to establish the examining board. They advocated an examination by the board for admission to a medical college, unless the applicant held a certificate issued by the board showing him to be a graduate from a high school. They advocated an examination by the board after he has graduated before he could practice medicine.

Unfortunately, as has been related to-day with reference to Tennessee, medical students interfered through the legislature and secured exemption of those students that matriculated in 1904 from this examination. That arrangement ends this year, however, and as a result all of our students will be examined. We have matriculated at least  $33\frac{1}{3}$  per cent. better material in our schools during the last two years, because of this requirement of a certificate from the state board for entrance to our schools. Because students expect to be examined by the state board before they are licensed, they are doing 25 per cent. better work than they did before. There has been a consolidation of two medical colleges, so that instead of five we now have three, with probably a still further consolidation in the future, and my own conviction is that we will have one that is endowed, or probably a department of our state college, which is the State University. Therefore, if you want to get results, stimulate the small colleges to do their best work; take away from the medical colleges all power of admission to medical colleges. Let every state require that a certificate of qualifications issued by the state board be demanded for admission to medical colleges, as well as graduation and an examination before license is given to practice medicine. Then let the state boards regulate the question of recognition of these qualifications for admission by adopting some measure by which they can test accurately the educational qualifications of the applicant. This will do more than anything else. It is the law that does it, and we all obey the law.

When we come to the question of how the boards shall conduct their examinations of students, it seems to me, after all, the general question must resolve itself into this, that the board must do the best it can to determine whether the applicant has the proper training in medicine and the intelligence to apply it in his work. It is not a question of cramming which has been so elaborately discussed here to-day. The question of teaching, in the first place, chemistry, bacteriology and pathology in the laboratory is all right; but if you stop there and do not teach men how to apply this knowledge in their practice you have taught them nothing. Teach them the philosophy of these subjects, the necessity of knowing them and their application, and you will have accomplished something. Teach a man bacteriology without teaching him about the bacteriology of the intestinal tract; without teaching him about the necessity of knowing these things in his surgical practice; without teaching him the philosophical application of his knowledge, and he will be scarcely benefited by his knowledge.



Teach a man not only laboratory work and methods, but teach him to apply the knowledge he gets in the laboratory, and then he will remember the practical part of it.

DR. E. B. HARVEY, Massachusetts:—I want to say one word in regard to those states that are obliged to examine undergraduates. I have appeared before the legislature of the state I represent this past winter, hoping I might establish requirements of graduation as a preliminary to an examination. But I have been utterly defeated, and we stand to-day as one of the five states that must examine non-graduates if they apply, and I think we shall continue to stand in that line.

In regard to non-graduates we are confronted with this thing in Massachusetts. We have at our doors Harvard, Tufts College and Boston University, strict institutions. When, at the annual examination, they throw down a student who fails in hygiene or in some other one study, perhaps, he can not receive his degree until one year from that time. Now, that man who is thrown down in hygiene may be just as competent to enter on the practice of medicine as the man who happened to pass in that branch. There is some reason for saying that he should receive his license to practice medicine if the board thinks he is competent to practice. There is no power in the commonwealth that can go behind the decision of the board of registration in Massachusetts. That should be the case in every commonwealth. The word of the board should be law. There should be no appeal from it, and I think in every state there should be a single board, a single power, to say whether this or that man shall enter on his professional duties as a physician.

One word in regard to the examination at the end of the second year. Of what possible value can it be to the great body of young men who go to Baltimore every year to enter the medical schools there, centering there from all parts of this country, if at the end of the second year they are to take their examination before the medical board, if at the end of that course of study they are scattered again to the four corners of this country? If it means that the examination by the medical board of Maryland should be received as authority by the medical boards of Texas and Massachusetts, then it never will be. You can not bring forty or fifty commonwealths in this country to agree on any single matter of legislation.

With reference to the methods in Great Britain, it has a great medical council. No man in the medical schools of Great Britain receiving his degree can graduate except by the voice of this medical council. The schools in Great Britain do not graduate; the medical council graduates, and when they receive credentials from the medical council they are licensed to practice in the dominion of Great Britain. What is true in Great Britain would be true as regards a single state in this country. Let the state board in Indiana, for instance, be authorized to say who shall graduate from the medical schools of Indiana, and when a person has received the sanction of the board to graduate from any of the schools of Indiana, that would be his license to practice in that state. That would be an ideal examining board. The trouble is, we have too many such nationalities. We are trying to unite on something that



we can never unite on, because we are governed by different legislative bodies.

DR. B. D. HARISON (closing the discussion on his part):—The real object of these examinations seems to have been lost sight of by a great many of the gentlemen who have spoken. I understand the object of the examination is to obtain testimony as to what a man knows, whether the questions are hard or easy; it makes very little difference so long as you obtain that testimony.

The gentleman from West Virginia said that they gave the simplest kind of examination, although they plucked 21 out of 35. If the examination had been more thorough he probably would have plucked 70 out of 35. (Laughter.)

I sympathize with the argument made by Dr. Spurgeon, but I think we ought to go a little further. If the boards can accomplish such wonderful results by such poor methods, how much more they would accomplish if they used proper means? An examination is conducted for the purpose of determining by testimony and discretion the knowledge of the applicant, and we must resort to the ordinary means of obtaining testimony, as administered by other bodies. Who would ever imagine a man giving testimony in a court being asked a question and being required to write it out? What kind of testimony would we get as to his knowledge of a subject? What jury could decide whether he had a perfect knowledge of that subject or not, or whether his evidence was of any use? You must come in personal contact with the applicant, study his disposition, study the method by which he gives his testimony. You have got to have that personal knowledge. Every prosecuting attorney who addresses a jury determines facts, and these facts we require are important to the state, whereby the board can certify that a man is competent and safe to practice medicine. This method should be improved in some way or other, and it is the duty of the Council to suggest that method. It is a problem which can be worked out. By an oral examination we can obtain more real information in the examination of a candidate by questioning him and by looking into his personality than can be obtained in a week by a written examination, which may have been obtained from quiz compends, etc. It is not a proper examination.

The object of state boards is to protect the people and to see that the method of examination is properly carried out, and if examinations are properly conducted, these boards are protecting the people, in a much greater degree than if the method was slipshod. No legislature will let down the bars because a board has attained the object for which it was appointed by proper means. Legislatures recognize and realize these things very acutely.

DR. MEANS (closing the discussion):—If I have in my paper advocated something in advance of the conditions at the present time, I do not wish to beg your pardon for it, but I wish to emphasize the fact that within another decade every state in the union will be examining undergraduates for licensure, giving them credit at least for two years.

One gentleman made the remark that a student forgetting the work of his first two years would be unable to pass his final examination. That was the least suggestion I had to

make, although if you will consider some of the questions passed by state boards, you will see the force of my remark. I could cite many instances, but one will be sufficient, where the question was asked: Give the component parts of strychnin. I will ask whether such a question, even though taught in the first, second and third years, is a pertinent one, and whether students are required to give the formula for strychnin one year hence. I doubt whether it should be done. A point I wish to emphasize is that students, unless they have carefully studied the fundamental branches of the medical course, are not fit to take up practical work in the third and fourth years, and it is nothing more than right and proper that examining boards should look on those students at a time when it will be profitable to the student, to the college, and to the profession at large.

I do not agree with one of the gentlemen who said that the function of the state board is a personal one, or, rather, a personal valuation; but I believe it is a question of admitting men to the profession who are qualified to practice medicine.

I would call your attention to an editorial in *THE JOURNAL* of the American Medical Association,<sup>1</sup> wherein it mentions the fact that Germany to-day is organizing schools over the country for the education of men who graduated years ago, and did not have the privilege or the education in the laboratories they should have had. These schools are being organized for the education of members of the profession that are in practice. I claim and contend that it is the function of the state board, and one that it should exercise, and if the laws do not admit of it now, in due time our legislators will so amend the laws that these boards can look in on the protégés at the expiration of two years' work.

In bringing the conference to a close **CHAIRMAN BEVAN** said: In the name of the Council I desire to thank the gentlemen who have presented us with these valuable reports and discussions, and to thank all of you for your assistance and presence here to-day. This is a movement in which we have a common interest. There can be no doubt about the result of this movement in elevating medical standards. It is simply a question of how rapidly it can be done and should be done, and personally I feel that a meeting of this kind is of great value. It certainly has been instructive to the members of the Council. We shall stand adjourned until the next annual conference, and we hope that you will all be with us again at that time.

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## REPORT OF THE NEW YORK COMMITTEE ON MEDICAL EDUCATION.

A. VANDER VEER, EDWARD D. FISHER, AND WILLIAM FRANCIS CAMPBELL, ALBANY.

Committee on Medical Education from the Medical Society of the State of New York.

[This report was not read at the conference, but is of particular interest in connection with the subjects discussed.]

The Medical Society of the State of New York has been in thorough sympathy and accord with the efforts of the com-

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1. *THE JOURNAL*, April 27, 1907, 1437.

mittce on medical education of the American Medical Association to raise the standard of medical education in the United States and to bring about a closer uniformity in entrance requirements and medical curriculums in the different states. The standard recommended by the committee at the Portland meeting of 1905 is exactly the standard which the State of New York has been following for a number of years. When the medical act of 1891, governing the practice of medicine in the State of New York, went into effect, the provisions of the statute were practically similar to the Portland recommendations. In order to work no hardship, however, to medical schools, and not to make the transition in entrance requirements too abrupt, it was necessary for the Board of Regents of this state to modify the entrance requirements and gradually to reach the four year high school standard for entrance to medical schools. Since Jan. 1, 1897, however, a four year high school course or its equivalent gained in examination, has been the requirement for matriculation in a medical school. Even at the present time, however, New York permits conditional matriculation for entrance on the first year's course of medical lectures, on evidence of the completion of three full years of high school work or its equivalent, and requires the fourth year to be successfully made up by the candidate before entering on the second course of medical lectures.

In our opinion the gist of the Portland resolution lies in the first provision of the recommended standard, viz., that the preliminary education be passed on by specially designated state authorities. This seems to us in the light of fifteen years' experience an absolute necessity in the administration of medical statutes. It would be a great mistake to permit faculties of medical colleges to pass on the credentials submitted, for aside from the fact as to whether they were disinterested parties or not, they have not the evidence at hand or the means of obtaining it for properly valuing the weight of secondary credentials which may be furnished from secondary educational institutions in all parts of the world. Neither should this duty devolve on the state board of medical examiners for precisely the same reasons. Under no machinery less than that of a well conducted state education department can all the necessary data be collected for properly judging the standard of educational institutions. The education department of the State of New York has for years been a clearing-house for such information, and the data has been gathered not only by careful and exhaustive examination of the reports and records, but by personal examination and inspection of schools and colleges. New York State has twice had in Europe special inspectors who have carefully examined the various lycées and gymnasia of Europe and who are competent to accurately estimate the comparative value of European and American educational credentials. The constant reference to this body of records and its daily use in passing on credentials submitted by candidates from all parts of the world for entrance to New York professional schools has brought home with particular force to the committee from the Medical Society of the State of New York the absolute necessity of a responsible state authority, preferably the state education department, to pass on these

matters. Otherwise your committee feels that the mere provision in a statute of a four year high school course as a preliminary to medical study would be of little value and capable of being greatly abused.

Your committee has also studied with great care "the ideal standard" submitted at the Portland meeting, and while in thorough sympathy with the manifest object of the resolution, viz., the advancement of medical education, we are not yet ready to commit ourselves to the proposition of practically a five year medical course. To insist on a thorough four year preliminary education and a thorough four year medical education is, in our experience, thoroughly abreast of the present day demands, and when executed as rigorously as are these requirements in the State of New York, they have caused some criticism by their exaction. While in the future it may be possible to compel a five year medical course, we see no immediate demand for it and doubt its advisability. Should this preliminary college year be required between the high school and the medical college, its curriculum should undoubtedly embrace more than the subjects of physics, chemistry and biology.

In fact, we are almost disposed to say that should the time ever come when it was deemed advisable that a degree in medicine should be founded on some part of the curriculum of a liberal arts college, it would be more educational and more defensible to require a two years' course in a liberal arts college, or what might be the same requirement, a six years' combined liberal arts and medical education. We are not at present, however, quite sure that the interpolation of a single year devoted to the study of physics, chemistry and biology would produce physicians of materially broader capabilities, or that the special study of these three subjects, such as is given in liberal arts colleges, would practically assist to any great degree in the development of medical practitioners.

In 1904 an amendment to the medical statute of the State of New York was passed permitting the Board of Regents to formulate a course of study which should lead to a combined baccalaureate and medical degree. The object of this amendment was two-fold: First, to induce more college bred men to enter the medical profession by shortening the term of study one year in order to obtain both degrees, and second, to permit this first or preliminary medical year to be carried on in the colleges of liberal arts. The procedure under this provision of the statute has fallen under three distinct heads:

1. Those universities which maintain both liberal arts and medical faculties. There is no problem here, as each university so arranges its curriculum that a student can carry the work of both degrees in seven years, either by accepting the first year of medical work as the fourth year of the baccalaureate course, or by the introduction of the point system of electives, where a certain number of points are necessary for obtaining both degrees, requiring that a certain percentage of the points be gained in the liberal arts course and the balance in the medical course.
2. Those liberal arts colleges which have entered into affiliation with medical schools, whereby the first year of work in the medical school is taken as the fourth year of the baccalaureate course.
3. The establishment of a medical elective



in the junior and senior years of the liberal arts colleges, the successful completion of which will be accepted by medical schools as equivalent to the first year's medical work.

The procedure under this heading is still unsettled. A joint committee has been appointed from the medical schools and the liberal arts colleges of this state to formulate a curriculum which is capable of execution in the liberal arts colleges and at the same time acceptable to the medical schools. There would seem to be no inherent difficulties in the way of the adoption of such a program, and the committee is practically ready to report its plan. Curiously enough, however, it has run against this condition, viz., that medical authorities in other states have expressed their unwillingness to accept this arrangement and have stated that they would be obliged to refuse to recognize the degrees of graduates who pursued this seven-year course. The committee is of the opinion that this is based on a misunderstanding of the exact work required, and that a thorough appreciation of the really advanced standard of medical education which would be brought about by this arrangement would lead to a reconsideration of such decisions. The committee hopes, however, to be able to report in the near future a successful arrangement of such a course.

Your committee also reports that there is now before the legislature of the State of New York, having already passed one house and favorably reported in the other, a bill revising the medical statute passed in 1891, and particularly defining the practice of medicine in accordance with recent decisions of the Supreme Court of this state. The preliminary medical standards are not affected by this bill, except that a minimum of a seven months' term for each medical course is required in place of the obsolete six months in the old law. As a matter of fact, our medical schools have always had at least a seven months' course, and in some schools eight to nine months.

The main points, however, to be gained by the new bill are:

1. A precise definition of the practice of medicine, which we give herewith as follows: "A person practices medicine within the meaning of this act, except as hereinafter stated, who holds himself out as being able to diagnose, treat, operate or prescribe for any human disease, pain, injury, deformity or physical condition, and who shall either offer or undertake, by any means or method, to diagnose, treat, operate, or prescribe for any human disease, pain, injury, deformity or physical condition."

2. A careful revision of the registration and penalty clauses to accord with the practical experience of the last fifteen years, and to further accord with the provisions of the penal code of this state.

3. The abolition of the unwieldy separate examining boards for each medical society, and the substitution of a single board to be appointed by the Board of Regents without reference to any school or practice of medicine. The theory on which this bill was introduced is that it is the duty of the state to fix the requirements for those who are to practice medicine within the state, and that this should be done regardless of the theories of practice and without recognizing any particular school or cult of medicine. In other words, after a candidate has passed



the state's scientific licensing test, he is at liberty to practice any form of medicine which he may choose.

Your committee has given much thought to the introduction of a course in our college curriculums, of medical economics and other subjects, referred to in the circular letter, but does not feel able to give this its endorsement at the present time.







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